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ABSTRACT

The oral testimony and prepared statements of educational researchers and practitioners comprise this record of a hearing on the proposed national research and development center for the effective education of disadvantaged youth. Committee members expressed concern about Department of Education Office of Educational Research and Improvement (OERI) accountability in funding and review processes for the proposed center. The failure of OERI administrators to testify was noted. The idea of "learning grant colleges," based on the agricultural extension programs of land grant institutions, was forwarded as a delivery system for research, development, and dissemination. Testimony suggested that the plan for the proposed center reflected too little commitment to the educational needs of the disadvantaged and too little input from advocates and knowledgeable persons. Argument was made for distribution of funding among existing centers, and systemic responses to developmental needs of the disadvantaged. Commitment to the premise that all children can learn was advanced as a critical step in the process. The following issues were seen to require careful consideration: (1) student role ascription; (2) collaboration; (3) governance; (4) grant awarding; (5) funding; (6) dissemination; and (7) systematic equity. A key role for educational technology in disadvantaged education was urged. Increased academic involvement and decreased partisan interference in education were recommended. (AF)

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HEARING ON CENTER FOR EFFECTIVE SCHOOLING OF DISADVANTAGED STUDENTS

ED309203

HEARING

BEFORE THE

SUBCOMMITTEE ON SELECT EDUCATION

OF THE

COMMITTEE ON EDUCATION AND LABOR HOUSE OF REPRESENTATIVES

ONE HUNDREDTH CONGRESS

SECOND SESSION

HEARING HELD IN WASHINGTON, DC, SEPTEMBER 29, 1988

Serial No. 100-105

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HEARING ON CENTER FOR EFFECTIVE SCHOOLING OF DISADVANTAGED STUDENTS

THURSDAY, SEPTEMBER 29, 1988

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON EDUCATION AND LABOR,
SUBCOMMITTEE ON SELECT EDUCATION,
Washington, DC.

The subcommittee met, pursuant to notice, at 9:30 a.m., in room 2261, Rayburn House Office Building, Hon. Major R. Owens (chairman of the subcommittee) presiding.

Members present: Representatives Owens and Hawkins (ex officio).

Staff present: Maria Cuprill, staff director; Laurence Peters, legislative counsel; Jillian Evans, committee clerk; and Wanser Green, staff assistant; and Ricardo Martinez, legislative analyst.

Mr. OWENS. The Subcommittee on Select Education will now come to order.

Today, we are considering the grant for the Center for Effective Schooling of Disadvantaged Students, and I will begin with an opening statement.

A shadow of suspicion and doubt has been cast over the integrity and accountability of the grant awarding process for the proposed new Center for the Effective Education of the Disadvantaged. Strange behavior always generates suspicions when millions of dollars are at stake, and the behavior of the top officials at OERI has been strange indeed.

First, they have refused to consult about the funding process for the center with the authorizing committee, the committee on Education and Labor. Secondly, there is confusion concerning who has the power to make the final decision on this grant since the OERI chief, Chester Finn, has already resigned from the agency. Finally, the review process for the proposed center is being rushed and stampeded for reasons that are not being publicly explained.

For some unexplained reason, OERI appears to be locked into a commitment to award this grant without appropriate deliberations. OERI seems compelled to ignore the larger education community's pleas for restraint. The alternative proposal is a simple one: we must discontinue the present process and, instead, use the available appropriation to fund a planning process for a center with a mission that is relevant to the most critically disadvantaged students in our Nation, inner city youth.

The effective education of the disadvantaged is one of the most pressing problems that the education community faces today.

Indeed, it is not an exaggeration to state that unless we take steps to rapidly develop approaches that work in our inner city schools, we will face disastrous economic, political, and social consequences on a massive scale.

The statistics currently available are truly shocking. For example, of the 39,500 students who enrolled in the ninth grade of Chicago's public schools in 1980, only 18,500 or 47 percent of the students graduated. Among these graduates, only 6,000 were capable of reading at or above the national twelfth grade level.

The situation for blacks and hispanics in this and other school systems is even bleaker. Of the 25,500 ninth grade black and hispanic students who were originally enrolled in the same Chicago schools in 1980, 16,000 did not graduate. Of the 9,500 students who did graduate, 4,000 read at or below the junior level, and only 2,000 read above the national average. These numbers are repeated in inner city communities across the country. Certainly, New York City statistics can match these.

We have, in short, a crisis of national and perhaps international dimensions. Professor William Julius Wilson from whose latest book, The Truly Disadvantaged, those figures that I have just quoted were taken, describes the communities that produce results like this as "ecologically and economically very different from areas where poor whites tend to reside." He further describes a situation of growing social isolation from mainstream America. The flight of more affluent families to suburbs has meant that a central core of hopelessness and poverty is building up within our inner cities.

Inner city schools have to help children exposed to high crime, homelessness, and drug trafficking deal with their future. Many of them lack even basic resources like textbooks to deal with this challenge. Others have to contend with exhausted and demoralized teachers who have lost the one basic value they could pass on to their students, and that is hope.

The Administration has waited seven long years to confront this emergency by finally agreeing to fund a Center for the Effective Schooling of the Disadvantaged. It is a sad commentary on our system that we have had to wait this long, and when the initiative was first conceived, it was devised in such a hasty manner that we have a concept that is unable to draw the support from Congress and the community that a more well developed proposal could command.

It is significant that Dr. Finn is not here to face the challenge of explaining to this subcommittee the reasons for proceeding ahead with a proposal that in the April hearings and in a subsequent letter signed by myself and the chairman of the full committee, Mr. Hawkins, we had urged him to put on hold. The so-called planning process which followed was a slip-shod affair that did not involve input from minority researchers most familiar with the problems of how to create effective schools for the disadvantaged. The proposal was opposed by three of the major education groups represented here in Washington as well as heavily criticized by leading black scholars.

They did not oppose the idea of funding a new initiative on the disadvantaged. They were simply opposed to the way that the department had conceptualized the long delayed initiative.

It was felt that the planning paper approach would have made it harder, rather than easier, to come up with effective solutions for this population which is so badly in need of help. Rather than more and more attempts to use their lives as statistics in an endless dissertation on school failure, the contention is that these students deserve intervention and emergency assistance.

It is important that if we are going to move ahead in this area, individuals who care about the tide of hopelessness in the inner city schools must come together to support an expanded and more relevant initiative. It may not necessarily be designed like a conventional center of the type which we have been funding for twenty years or so, but it could instead encompass many more possibilities of the kind that are described in a recent Subcommittee on Select Education staff report.

A hybrid center-lab of the kind referred to in that report could pursue the problem of assisting ailing schools by far more aggressive and interventionist strategies. The criteria for award winners could be based much more on an institution's capacity to work and communicate with disadvantaged groups. It would be more coordinated with the existing centers and able to work more systematically with existing school systems than is presently the case.

As the subcommittee prepares its final report, we will be developing and refining our concepts with the help of the wider community, including many of the distinguished panelists that we have assembled here today. We welcome the panelists here today to not only comment on the proposed Center for the Effective Education of the Disadvantaged but on the entire body of that report, since all of the panelists were given copies of that report.

I yield for an opening statement to our chairman, Congressman Hawkins.

Mr. HAWKINS. Thank you, Mr. Chairman.

May I say that my views coincide completely with those as stated in the opening statement that you have presented to the committee.

Also, I would like to apologize at this time. The full committee, as you know, which I head, is conducting a review of the Job Training Partnership Act, and in order to open up that particular hearing, I will, obviously, be required to absent myself at this time. However, I hope to return, and I hope that during the day, the very excellent witnesses that you have been able to invite to the hearing this morning I am quite sure will further this subject.

I want to commend you for what you are doing. I think this is an issue we need to fully explore, and I think you are doing it in an excellent and objective way. For that, we certainly wish to express our full support and appreciation.

I thank you for the work you are doing on this issue, and I regret that I must leave at this time.

Mr. OWENS. Thank you very much, Mr. Chairman.

Our first witness this morning was to be Dr. Finn or a representative of the Office of Educational Research and Improvement. Not only did Dr. Finn notify us the day before yesterday that he would

not be attending, but no person representing the Office of Educational Research and Improvement has been asked to come here to represent him, as is usually the case.

I would like to open by reading the questions that were placed in the letter addressed to Dr. Finn, have those questions on the record, and have the persons here hear them also. We asked Dr. Finn to come prepared to tell us:

When do you expect the first products from this proposed center? What is likely to be the impact of these products on the present crisis in inner city schools?

What specific factors led you to conclude that there was a need for a new center? Did this same need exist five or ten years ago?

What specific mechanisms currently exist for fostering coordination among the labs, centers, NDN, and other OERI entities that already exist with respect to research on the disadvantaged? Has this been a priority for OERI?

Since resources are extremely scarce, should the activities of such a center, a Center for the Effective Schooling of the Disadvantaged, be focused first on efforts to educate the largest and most severely disadvantaged population, inner city youth?

Should a center for the disadvantaged have a special or different capability criteria?

What mandates to conduct research relevant to the study of the education of the disadvantaged has OERI included in the requests for proposals issued for the other funded centers over the last seven years?

What was the initial allocation for the first ten centers funded by OERI?

I will start with at least giving one or two of the answers, the facts that we know and have on our records, which are limited, and, certainly OERI and Dr. Finn had better information, I am sure, or more thorough information.

On the last question, that is, the initial allocation for the first ten centers funded, we did find that when the University of Pittsburgh Center was initially funded, the amount was $490,000. That was in 1964. That was the amount of the grant. In today's dollars, that was a grant for $2.4 million.

The University of Oregon was funded that same year, in 1964. A grant of $509,000 for the initial center was made. That would have translated in today's dollars to $2.5 million.

A Center for Urban Education grant was given to a consortium of New York City universities for $1.2 million in 1966. In today's dollars, that would be $4.7 million.

That gives you some idea of what kind of funding for the initial start-up of a center was like when this program was first conceived.

For the benefit of those here, I would like to also read, recommendations 9 and 10, from the staff subcommittee report on OERI. I was going to ask Mr. Finn to respond to those recommendations, and I will just read them here at this point for the record. Recommendation 9 in the report said that:

OERI must fund new initiatives to improve the effectiveness of education for the disadvantaged, including the establishment of a new national center-laboratory for the effective education of the disadvantaged. Such new initiatives should not go for-

ward until there has been appropriate consultation with Congress and knowledgeable scholars in the education community.

To establish a Center for the Effective Education of the Disadvantaged, which is merely one more such center, is to throw dollars in the same direction that previous dollars have been thrown with grossly inadequate results. Indeed, present law requires that all of the already established centers should be engaged in activities which contribute to the effective education of the disadvantaged.

This is also the mandated mission and goal of all of the other activities financed by OERI. Laboratories, independent researchers, bureaus, et cetera are all required to focus primarily on the effective education of the disadvantaged.

I read from the original legislation statement for the creation of OERI. It reads as follows:

The Congress declares it to be the policy of the United States to provide to every individual an equal opportunity to receive an education of high quality regardless of race, color, religion, sex, age, handicap, national origin or social class. . . . Inequalities of opportunity to receive high quality education remain pronounced. . . . While the direction of American education remains primarily the responsibility of State and local governments, the Federal Government has a clear responsibility to provide leadership in the conduct and support of scientific inquiry in the educational process.

Any new entity funded by OERI should be primarily focused on harvesting the products which have already been generated by existing centers and labs; collaborating with ongoing projects and activities, coordinating similar and supportive work among the centers and laboratories; maximizing the dissemination functions of the existing Educational Research Information Centers; the identification of knowledge and research gaps which remain; launching new research efforts to close the gaps; expanding the development and dissemination activities in ways which guarantee an ongoing Federal presence for local education agencies, teachers, parents, and community leaders.

To accomplish this timely and climactic mission, we need a National enter-Laboratory with goals and objectives which are different from the existing centers.

A new national center-laboratory should not be bound by the parameters which have limited the other federally funded centers and laboratories. Instead, the new entity should have maximum flexibility to engage in any research, development, and dissemination activities which promote the effective education of the disadvantaged.

The new center-laboratory should be structured to initiate and oversee a variety of approaches to research in combination with extensive experimentation and dissemination. If some modification of existing law is needed, then such amendments should be enacted.

That is the ninth recommendation of the report. The tenth recommendation related to the center is as follows:

A National Center-Laboratory for the Effective Education of the Disadvantaged should be utilized as the core of a pilot project for the provision of ongoing assistance to schools whose enrollments are made up predominantly of at risk students. A responsive and interactive delivery system for research, development, and dissemination (similar to the original agricultural extension programs of the land grant colleges) must be installed.

Maybe we need what we should call "learning grant colleges."

There is an acute problem of massive proportions facing our public schools. Particularly in the large urban areas where the greatest number of disadvantaged students are concentrated, the need for far reaching improvements is critical and urgent. The present piecemeal approach of OERI will never have an impact which is significant in proportion to the great need.

A system with greater capacity for assisting with a variety of problems and a capacity for responsiveness is needed. A system which is permanently available to support operating educational systems would represent a quantum leap forward. Replacing the occasional and episodic involvement of OERI with its haphazard delivery of the benefits of research and development, there should be a vehicle for delivery similar to the program developed by the United States Department of Agriculture and the land grant colleges.

What has been good for American agriculture might prove to be a new beginning for the most seriously damaged education systems of our country. American farms

were transformed by the steady interjection of the benefits of research and development into the food producing industry. American agriculture became the model for the world as a result of the early marriage of theory, engineering, and practice. A similar approach to educational research and development, within a decade or two, could achieve equally astounding results for American education.

At the risk of exhausting the metaphor, a more detailed description of the delivery system which I am proposing might compare it to the "drip irrigation" technique so successfully popularized by the Israeli farmers. The steady, the continuous, the ongoing application of the benefits of research and development in economical doses that are appropriate for the problem is the desired outcome.

Technical assistance agents similar to the county agents utilized by the Department of Agriculture may become the key components of this more direct approach. Many of the organizational and human engineering techniques pioneered by the county agents should be thoroughly examined for possible use in the dissemination of educational research and development.

What is needed is an experiment which tests an approach which, instead of requiring a totally new structure, would prove to be a logical expansion for the work of the existing entities, the centers, laboratories, information units, et cetera. With education agents serving as the quarterbacks for their assigned areas, these centers, independent researchers, regional laboratories, and ERIC units would be called upon as needed.

Beyond the utilization of ERIC to rapidly deliver the products already available in centers and labs, such education agents would be the logical originating point for proposals for new research or for the contracting of the expertise available in centers and labs to replicate programs and projects which these centers and labs have already successfully developed or for contracting with independent researchers.

At this time, the proposal is to limit the experiment to testing a new system of delivery of support to accomplish these educational improvements to localities with high concentrations of disadvantaged students. It is also proposed that a new National Center-Laboratory for the Effective Education of the Disadvantaged be the primary vehicle for the testing of this concept, for the launching of this pilot project.

This recommendation, however, is being made on the assumption that what will prove to be of great value in immediately improving schools for the disadvantaged will also be good for all types of American school systems. Eventually, a delivery system which parallels the early extension program of the Department of Agriculture should be installed to cover every school district in America.

As the ideological and commercial competition mounts in the global village of the twentieth and twenty-first centuries, there will be a permanent need for educational improvements regardless of the present levels of achievement. To meet this challenge, we should not hesitate to fully explore a time tested approach which has achieved great success. What made a miracle for American agriculture may at least stimulate steady and escalating improvements in American education.

Now, I have taken the time to read these two recommendations, because we were asking Dr. Finn to react to those recommendations as well as to the other questions. I also want you to know that those are very strong recommendations. They are not written in stone. They are available. We would like reactions to them and comments on them by all interested parties.

Before we call our first panel, I want to state that the record will be kept open for the ranking Republican member of the committee, Mr. Bartlett, to submit a statement or additional material.

Our first panel will be Dr. Willis Hawley, the Chairperson of the American Educational Research Association of Vanderbilt University; and Dr. Charles Moody, Vice Provost for Minority Affairs of the University of Michigan, Ann Arbor.

Gentlemen, welcome, and you may proceed, Dr. Hawley.

STATEMENT OF WILLIS HAWLEY, CHAIRPERSON, AMERICAN EDUCATIONAL RESEARCH ASSOCIATION, VANDERBILT UNIVERSITY

Mr. HAWLEY. Thank you, Mr. Chairman.

It is a privilege to address the committee on behalf of the American Educational Research Association on the need for research and improvement programs relating to the education of the disadvantaged. I intend to draw attention today to the inadequacies of the Federal Government's approach to meeting the Nation's education needs through research and improvement by using this particular case as a jumping off point, if I may.

I want to be clear, though, that I am not suggesting that there are any illegal or technical aspects of this that are irregular or inappropriate. Rather, the approach that is taken is too little too late, and I will elaborate on that as we go.

The importance of addressing the question that way is illustrated by several of the comments you made, Mr. Chairman, about the depth of this problem, and I want to also acknowledge that the approach I take here today is influenced by the committee staff report, particularly the subtitle of that report which is, as you know, "Reclaiming a Vision for the Federal Role for the 1990s and Beyond." That, I hope, will capture my purpose

I think, as you implied, it is not too much to say that if we could significantly improve the education of the disadvantaged, the United States would be well on its way to having one of the best educational systems in the world. There are two reasons for that. One is that our schools work least well for those children whose intellectual and social development is impeded by reason of mental, physical, or environmental handicaps. Second is because the changes we would make to be responsive to the needs of those children would benefit all children.

One need only consult the department's own statistical studies or to talk to any reasonable sample of educators, parents, citizens, and policy makers to appreciate the importance of the problem of quality education for the disadvantaged. The AERA conducted such an inquiry two years ago, and across every sector we talked to, there was disagreement on almost everything, but the one area on which everybody agreed was that we need to focus more energy on children at risk.

I won't go into parts of my testimony which essentially replicate the picture that you painted, Mr. Chairman, as to the nature of the problem. I would simply point out that for a number of social and technical reasons, the problem that is now so horrendous is likely to get worse unless we make some fundamental changes in the way we go about understanding the problem and addressing it.

Given the data that is available from almost every source one might come into contact with and from every interested person in education, one might wonder why the department is so late to the task. I think there are probably four reasons in general, and I elaborate on them in my testimony.

First, the wrong persons were asked; secondly, the wrong questions were asked; third, the responses to the questions were not heard; or, possibly, a more subtle explanation is that the focus was lost in translating the priority into research and improvement activity.

I elaborate on that in my testimony. Let me summarize that by saying that I discuss that it is altogether probable that we would

have come up with a different approach to the problem and one more quickly had the following conditions been in place:

That the Department of Education's leadership from the Secretary on down had made it clear that the education of disadvantaged children was important;

Second, that there was a formal process to critique the agenda which involved advocates for disadvantaged children and which provided the time for knowledgeable persons to play a role;

Third, that a systematic effort to model the teacher-learning process had been used to generate alternative responses to the problem and that we could have looked more carefully at where our resources might have done the most good; and

Fourth, that there would be more educational researchers involved in this who had strong ties to minority populations, the strongest of which, of course, are race and ethnicity.

I would like to focus the remainder of my comments, Mr. Chairman, on the idea that a research center, even if we grant that that is desirable, is a wholly inadequate response to the problem and maybe not the best one. So, let me identify other options that the department had available to it, acknowledging that it would have required perhaps in some of these cases some manipulation of budget categories and some consultation with the Congress and so forth. Nonetheless, these are at least some of the things that could have been done.

The department could have assigned funds that would have been allocated to the proposed center to existing centers with stipulations related to the foci of these activities, the need to involve minority scholars, and other constraints. This could have been a competitive process, thus encouraging innovative and cost effective proposals. Moreover, OERI might have in fact used these resources as incentive money to encourage the centers to reallocate their efforts toward research for the disadvantaged.

There are two big advantages to this strategy. One is it increases resources available to the study of education for the disadvantaged. Secondly, it helps us, I think—and I want to emphasize this if I may—to resist the temptation to view the educational needs of the disadvantaged as being different in kind rather than in degree from the needs of most children.

I have worked a great deal on desegregation, Mr. Chairman, and I think we might want to take some lessons from how we handled that problem. Mr. Moody and I, in fact, have worked together on that question. Too often, we seek to separate the problems of the most needy from the problems of others, and the consequence of this is that the problems of the disadvantaged are inadequately and inappropriately addressed.

Whether disadvantaged children require wholly different educational programs than other children is an empirical question and one which is most likely to be answered correctly when those most knowledgeable about reading and writing, science, education, effective schools, and all the other components of quality education focus their attention on the relevant issues.

A third option that the department had available to it was, of course, a field initiated grants competition. This could have been accomplished through the centers, in fact.

There are a number of advantages to this approach, including the opportunity to include individuals or small teams of qualified researchers who are employed in institutions which do not have the depth or the experience to compete for a national center.

A fourth opportunity that the department had was to identify the best existing practices, to disseminate information about these efforts, and to evaluate the results of that effort. Dissemination of information, of course, in and of itself is seldom enough to bring about change. Thus, when effective practices are identified, their implementation could be facilitated through technical assistance and training programs.

Fifth, the department could have pursued the creation of a program to increase the number of minority scholars who might conduct research on the education of the disadvantaged. This ought to be a very high priority.

The sixth option available to the department was to invest in teacher and administrator training tied to research and development activity. We know that even the best ideas, to use your metaphor, if I may, of agriculture do not take root unless they are properly tilled, the farmers committed, and so forth. There are a lot of good ideas out there in which we do not place enough investment to allow teachers and administrators to effectively implement them.

A seventh alternative would be the creation of a task force or a mechanism to identify the full range of research and development activity we already have available, not only in OERI but in other parts of the department.

Finally, given the fact that the Nation at Risk dealt little with children at risk and that that is a risky business, we ought to imagine that the Secretary of Education who, at least in name, is the Nation's main advocate for children would have sought to focus the attention of the entire government on planning and implementing a comprehensive approach to enhancing the intellectual and social development of disadvantaged children.

Now, I have listed a lot of notions here. None of these are new ideas. They are all ideas we could point to that we have implemented successfully in other instances. It seems reasonable to me to argue that the best strategy is not a strategy but a mix of strategies that compliment one another, that are coordinated, but that retain a clear focus on this serious problem that you alluded to in your opening statement.

We need, in other words, to think of this as a first step. Otherwise, we will have lost a great opportunity, and I fault the department in not recognizing that it might have leveraged a much bolder plan, one which would perhaps capture the imagination of the country in the same way the Nation at Risk did had it had that ambition.

Let me conclude, if I may, by emphasizing that this issue—the problems that disadvantaged children confront are, of course, not limited to issues that can be dealt with in the schools. I know you are interested in Japan, Mr. Chairman, and I have spent some time in Japan. When one asks what the source of the quality of Japanese schools is, my answer is that it is at least as important to look at the role of families, the role of the community, and the interre-

lationship between social, cultural, and educational phenomena as well as health and other factors.

I think we have to realize that we are not going to solve this problem by relying only on the schools as the mechanism.

I don't need to convince you, I know, that this is a problem that affects not only the children involved but the Nation as a whole in a very profound way. At stake is the welfare of millions of individual children whose inadequate education will contribute to despair, low income, and anti-social behavior.

That is reason enough to do this. But all Americans have a stake in the education of the disadvantaged, and we have heard a lot about that recently from the business community, and that is heartening. I think we ought to continue to remind people that this is not simply a do-gooder activity. It is an essential activity in the interests of the economy and, in fact, the national security.

Mr. Chairman, I appreciate your deep concern for using research and improvement as a mechanism for addressing this important problem. The American Educational Research Association stands ready to be of whatever assistance we can in working with you in these efforts.

Thank you very much.

[The prepared statement of Willis D. Hawley follows:]

The Federal Government's Role in Improving the Education of Disadvantaged Children

Testimony of

Willis D. Hawley
Dean, Peabody College
Vanderbilt University

Presented at Hearings of
The Subcommittee on Select Education
Committee on Education and Labor
United States House of Representatives

September 29, 1988

Introduction

It is a privilege to address the committee on the need for research and improvement programs related to the education of the disadvantaged. The issue upon which this hearing is focused is the process used in establishing a national research and development center. Rather than focus on the particulars of the competition for the national center that is now underway, I would like to draw attention to inadequacies of the federal government's approach to meeting the nation's educational needs through research and improvement, particularly with respect to disadvantaged children, that are illustrated by the current competition. I will focus on how the agenda is set, the identification and evaluation of alternative strategies, how federal resources might be increased on the one hand and more efficiently used on the other, and the importance of making a comprehensive and systemic response to major problems.

Let me be clear that I am not suggesting that the current competition is inappropriate or that there has been or is likely to be any procedural irregularity connected with the competition. The issues I am concerned with, and which I believe this committee should be concerned with, are: why has the federal government been so slow to respond to this priority and why is the proposed response so limited? The importance of these questions is magnified by the depth and scope of the problem the nation faces in providing high quality education for the disadvantaged.

It is not too much to say that if we could significantly improve the education of the disadvantaged, the United States would be well on its way to having the best educational system in the world. There are two reasons why this rather bold assertion should be taken seriously. First, our schools are working least well for those children whose intellectual and social development is impeded by reason of mental, physical or environmental handicaps. Second, the changes we would make in order to meet the

needs of disadvantaged children would benefit virtually all children.

Setting the Agenda

Two of the most common ways to set the nation's research and improvement agenda are (a) to survey those who are responsible for improving our schools (including researchers) and (b) to examine the evidence derived from systematic empirical inquiry.

In 1986, the American Educational Research Association undertook a survey of representatives of teachers, administrators, parents, state officials and legislators, and school board members. This survey was complemented by a small conference at which the survey was discussed and its finding elaborated. Of all the issues identified as priorities for research and improvement activity, one stood out as being most significant and most perplexing. That issue, broadly stated, was how to better educate "children at risk."

There are numerous harrowing statistics about the increasing number of disadvantaged children and youth and the inadequacies of education and other public policies that might ameliorate the burdens they bear. Consider just four of the many aspects of the dismal educational status of disadvantaged children.

- As Richard Reich points out, "The worst-prepared third of young Americans--disproportionately lower-income--are almost totally unprepared [to function in the emerging economy]. They cannot do simple calculations, understand written directions, or read road signs, charts, and maps."
- Disadvantaged children, who score much lower on achievement tests than other children, have many fewer resources at home to support their achievement in schools. Seventeen year-olds disadvantaged by few reading materials in the home read no better than 13 year olds with access to many reading materials.
- Students from low socioeconomic status are three times more likely to drop out than students of high socioeconomic status, and low socioeconomic status students who live in urban areas are more likely to drop out than other students. In 1980, less than nine percent of the students in the racially isolated high schools of Chicago both completed school and could read at or above the national level for their cohort.

- Poor children are 1 /2 to 2 times more likely than non-poor children to suffer from one or more mental disabilities. In the case of mental retardation, the risk is 5 times greater.

This sad story goes on.

A fundamental reason why so many of our children do poorly in school compared to the children of other nations is the high incidence of child poverty we tolerate. The proportion of children living in poverty is higher in the United States than in any other industrialized nation. Between 1979 and 1985, the number of people living below the poverty line in the U.S. increased by 23%, while the poverty rate for infants and children (0 to 17 years) rose almost 31%. Almost one out of four first graders entering public school this year lives in poverty.

The disturbing incidence of poverty in the midst of plenty is unlikely to get better unless our policies--and our values--change. Sixty percent of teen-age mothers are unmarried when they give birth, a rate four times greater than it was 35 years ago. And two-thirds of new marriages are now likely to fail. These trends contribute to the challenge facing our schools because about 60 percent of children under 18 years living in female-headed single-parent families live in poverty and the rate is almost 70 percent for those in black female-headed homes.

The nation's social and economic future will depend on capabilities and motivation of all its citizens. However, economic and technological changes now underway are both eliminating jobs held by the less well educated and creating jobs which require a work force that is the product of quality schools. While an argument can be made that many American children have the best education in the world, no other industrialized nation has so large a proportion of its young people who are as poorly educated as does the United States.

Given the consensus among practitioners and policy makers found by AERA and the ubiquity of the evidence on the importance of quality education for the disadvantaged,

how could it be that the education of the disadvantaged has only recently become a priority of the Office of Educational Research and Improvement? Given that OERI had a process in place for identifying priorities through consultation, its neglect of the education of the disadvantaged might be the result of one or all of four circumstances: the wrong persons were asked, the wrong questions were asked, the responses to inquiries were not heard, or the focus was lost in translating the priority into a research and improvement activity.

There is probably no way to ensure that all individuals and groups that should be consulted are given a chance to identify priorities OERI should adopt. However, it does seem desirable that OERI develop a data base comprised of groups and selected individuals concerned with and knowledgeable about particular issues. This data base can be developed over time at low cost and should include advocacy groups as well as professional associations, researchers and policy makers.

The way questions are asked and the context within which they are asked influences the responses the questioner receives. When the current research priorities, as they are reflected in funded activities, were formulated by the Department of Education (ED) the idea that the nation had sacrificed excellence for other values, especially equal educational opportunity, was widely discussed in the media and various reports, including The Nation at Risk. Thus, it is not surprising that the education of the disadvantaged got little attention by ED. For the same reasons that ED asked questions in a way and in a context unlikely to yield much testimony to the needs of the disadvantaged, when such assertions were made they probably were weighted less heavily than other claims on resources.

The fourth possible explanation for OERI's belated recognition of the need for a research and improvement center focused on the needs of disadvantaged children is more subtle than the others and is not partisan in character. Let us assume that the needs of

disadvantaged children were addressed and heard in the process of identifying research priorities. In the development of strategies to address complex problems, it is conventional to break such problems into parts--to "decompose" them. Thus, a pattern of low achievement scores becomes a reading problem, and a reading problem becomes decoding problem, and so forth. In the process of trying to make the problem researchable--and solvable--the focus on the disadvantaged can be lost. All of this has nothing to so with the absence of concern for disadvantaged children but some ways to maintain the focus are to have a clear statement of concern from ED's leadership, the recurrent review of activities that were initiated to address the problem that involves advocacy groups, and the presence of researchers with links to groups with a special concern for the disadvantaged. While many white researchers demonstrate a strong commitment to the disadvantaged, it seems likely that a greater involvement of minority scholars--who are in short supply within most major research centers--would increase the probability that the needs of disadvantaged children would be identified and be sustained as a high priority.

Alternative Strategies for Addressing the Needs of Disadvantaged Children through Educational Research and Improvement Activities.

Assuming that it was agreed that the education of the disadvantaged could and should be enhanced significantly through research and improvement programs, what options for addressing this need are available? The establishment of a research center is but one possibility.

A second option available to ED was to assign the funds that have been allocated to the proposed center to existing centers with stipulations related to foci of activities, the need to involve minority scholars, and other constraints. This could have been a competitive process thus encouraging innovative approaches and cost-effective proposals.

Moreover, OERI might have allowed existing research centers to reallocate funds from previously planned projects to those focusing on the education of the disadvantaged and require that centers match new resources with those already allocated as a condition for the award of new funds.

This option should have received careful consideration. While some of the inquiries of the existing research and development centers funded by OERI do deal with the disadvantaged, it can be argued that these centers are a national resource that should be focused more than they are on the nation's most critical educational needs. Furthermore, it seems important to resist the temptation to view the educational needs of disadvantaged children as being different in kind than in degree from the needs of most children. Too often we seek to separate the problems of the most needy from the problems of others and the consequence of this is that the problems of the disadvantaged are inadequately addressed. Whether the disadvantaged require wholly different educational programs than other children is an empirical question which is most likely to be answered correctly when those most knowledgeable about reading, writing, science education, effective schools and all the other components of quality education focus their attention on the relevant issues.

A third option that ED might have considered is a small grants competition. There a number of advantages of this approach including the opportunity to involve individuals or small teams of qualified researchers who are employed in institutions that do not have the depth or experience to compete for a national center.

A fourth opportunity ED had available was to identify best existing practices and to disseminate information about these effective efforts to meet the needs of the disadvantaged. Dissemination of information, in itself, is seldom enough to bring about change. Thus, when effective practices are identified, their implementation could be facilitated through technical assistance and training programs.

A fifth strategy that ED could have pursued is the creation of a program to increase the number of minority scholars who might conduct research on the education of the disadvantaged. The number of minority students pursuing research careers in the social and behavioral sciences is very, very small and fellowships for graduate education and postdoctoral study could address this concern. As I noted above, the importance of increasing the number of minority scholars lies not in the premise that only they can study the educational problems that confront the disproportionate numbers of minority students who are disadvantaged. Rather, minority researchers often bring to their inquiries insight and commitment sustained by individuals and groups they interact with on a continuing basis. And, it seems likely, other things equal,that research in which minority scholars are involved is likely to be seen as more credible by minority practitioners and policy makers than research produced without their contributions.

A sixth option available to ED was to invest in teacher and administrator training that was tied to research and development activity. This could take the form of the development of models or materials and is well within the scope of activities currently supported by OERI. The importance of this option is evidenced in a host of studies that show that the implementation of any practice shown to be effective by research depends fundamentally on the willingness and ability of teachers and administrators to employ the exemplary practices.

A seventh alternative that might have been pursued by ED is the creation of a task force or other mechanism to identify the full range of research, development and improvement efforts now being supported by the department that are or could be focused on better understanding and better meeting the educational needs of the disadvantaged. Ways these programs could be better administered and better coordinated could have been identified.

In view of the magnitude and severity of the unmet educational needs of the

disadvantaged, ED could have created a national commission, in collaboration with the Congress, to assess fully what needs to be done, to identify alternative strategies, and to make recommendations. ED is understandably proud of the impact the report of the National Commission on Educational Excellence had on the nationwide effort to improve our schools. Since The Nation at Risk gave little attention to children at risk, turning the national spotlight on the education of the disadvantaged would be an appropriate action for ED to undertake. Indeed, if the Secretary of Education is the nation's advocate for children, ED might well have sought to focus the energies of the entire federal government on planning and implementing a comprehensive approach to enhancing the intellectual and social development of disadvantaged children and youth. I will return to the importance of this leadership role.

The options I have just identified are not new ones. Examples of the successful implementation of each by the Federal government exist. But it is clear that these and other options for addressing the needs of the disadvantaged through the activities that are within the jurisdiction of OERI were not explored. In fact, the idea for a center for research and development on the education of the disadvantaged has not been part of a carefully developed research and development plan for the nation.

Choosing Among Alternative Ways of Improving Education for the Disadvantaged.

It is clear that a national center for research and development is not the only strategy available to ED for identifying and demonstrating ways to improve the education of the disadvantaged. It seems reasonable to argue that some mix of the strategies identified above might have been employed. Indeed, if we are to seriously address the problems that must be solved in order to substantially increase the academic achievement of disadvantaged children, all of the identified alternatives--and more--will be needed.

To the argument that OERI's efforts to address the educational needs of the

disadvantaged should consist of more than a single research center, one might expect two responses: (a) resources are not sufficient to be comprehensive and (b) some action now is important and does not preclude other alternatives later. These are reasonable responses and one would welcome the Federal government's indication that the center it wants to establish is but the first step. But we have heard no such suggestion. Moreover, the willingness of the nation to develop and pursue a well funded and well designed approach to meeting the needs of the disadvantaged significantly depends on the leadership from the Federal government. Bold plans have a better chance of capturing the attention of the Congress and of the states than piecemeal proposals. The danger in implementing a national research center is that such action will be taken as evidence that the problem is being adequately addressed and that nothing more needs be done.

The Need for System-wide and Systemic Approaches to Improving the Education of the Disadvantaged.

In my discussion of the last of the strategies identified earlier, I alluded to the importance of addressing the need to enhance the education of the disadvantaged in comprehensive ways. Existing research makes it clear that knowing the right answers, even when this is possible, is not enough to bring about the development and implementation of effective programs that embody these answers. The full range of capabilities within OERI need to be brought to bear on the problems. But that is not enough. The federal government spends billions of dollars to fund educational programs focused on disadvantaged children. These efforts and those of OERI need to be better coordinated and long range planning that encompasses the responsibilities of all the appropriate agencies within ED is essential.

The educational needs of the disadvantaged are rooted in a number of conditions that are relevant to the missions of several federal agencies. Quality education for all

disadvantaged children is not likely until the nation more effectively addresses the poor housing, poor health, low family income and other conditions that impede the learning of disadvantaged children. In other words, while education can help enhance the opportunities disadvantaged children have to realize their full potential, that potential is significantly shaped by factors beyond the reach of educators. This reality aside, the low academic achievement of disadvantaged children will be attributed to the low quality of their education. Which is one more reason that ED should exert leadership in developing systemic responses to the developmental needs of the disadvantaged.

Final Comment

In this testimony, I have taken the issues surrounding the proposal to establish a single research center and turned them into an argument for leadership that cuts across the federal government and generates multiple research and improvement activities on behalf of disadvantaged children throughout the country. To those who would assert that this is a bit much, my answer is that the nation needs no less.

At stake is the welfare of millions of individual children whose inadequate education is likely to contribute to despair, low income and antisocial behavior. The bleak future many disadvantaged children face is reason enough to make a national commitment to developing better ways to meet their developmental needs. But all Americans have a stake in the education of the disadvantaged. The capacity of our nation to maintain its standard of living, to compete economically and to provide for our national defense depends on enhancing the intellectual capacity and competence of those children who are now disadvantaged for reasons beyond their control.

Mr. OWENS. Thank you very much.
Dr. Moody?

STATEMENT OF CHARLES MOODY, VICE PROVOST FOR MINORITY AFFAIRS, UNIVERSITY OF MICHIGAN, ANN ARBOR

Mr. MOODY. Thank you very much, and I would like to thank the subcommittee for inviting me to testify on the proposed Center for Effective Schooling of Disadvantaged Students.

This is a concept that is long overdue. Demographics, specifically the fact that our schools' population in the twenty-first century will be heavily minority, makes this idea of such a center imperative.

The idea of such a center has been discussed by other groups. The National Alliance of Black School Educators has made the establishment of a research center that focused on black education a high priority. They also plan to develop demonstration schools that use the research and disseminate the findings through their membership. Summer training academies have already been established where the members have an opportunity to learn about successful models for the education of black students.

At the University of Michigan, we have developed a concept paper that is similar. Our purpose at the University of Michigan is to discover the factors that are important to being an academically successful student of color and looks at model that goes beyond the classroom. We will examine four things:

One, what environmental factors in the school, home, and community influence minority youth and how they feel about education?

Two, what teacher behaviors do we find in the classroom interactions that are most successful with the student of color?

Three, what do we know or need to know about child development that will help students achieve? We will examine cognitive and intellectual influences on academic success.

Four, what and how do personal and social issues impact the educational success of minority youth?

After identifying and collecting research that is available, we will identify gaps and encourage scholars and their graduate students to investigate the areas we find lacking. Dissemination and testing of our findings will take place in local school districts where we have developed a Superintendents' Forum that meets on a regular basis to address issues that impact on the education of minority youngsters.

There are four questions that this proposed center—and I read the report—raises for me:

One, what do we mean by disadvantaged? Are we talking about urban minority students, or are we talking about any student who is not achieving? I say this, because without a working definition of disadvantaged, the scope of a center could become so broad that it merely becomes another research institute. The term "disadvantaged" leaves a lot of room for interpretation as to what one's disadvantage is. All of us have some disadvantage. It just depends on who is making the judgment. Further, to some, the term has negative connotations.

Two, what would be the central purpose? Is it to become a paper tiger where researchers write research papers for other researchers? Or is it to become a center whose primary audience will be school teachers or others in the field, the ones who are closest to the students?

Three, how will the findings be disseminated and used? More specifically, how will research be translated into practice? How will teachers or other individuals that are closer to the students use the findings of the center or its facilities?

Four, how willing are we to get rid of what we know isn't working? Are we really willing to examine and help educators implement innovative ways of educating students such as:

restructuring the school day and flexible scheduling;

developing collaborations with institutions of higher education, especially teacher education programs, such as one that is taking place in Ypsilanti, the George School Project, which is a collaboration with Eastern Michigan University and the Ypsilanti Public Schools;

accepting multiple measures of intelligence, that is, realizing that intelligence can be shown through other ways than cognitive such as musical, athletic, and artistic;

developing more partnerships with businesses;

pushing higher learning activities for minority youth rather than the usual remedial materials they have;

suggesting that schools pay attention to learning styles;

helping teachers learn different strategies such as cooperative learning and other kinds of things;

improving working conditions in urban schools so that teachers have more preparation time, better school buildings, less paperwork, an smaller teacher/student ratios?

What about teachers as researchers?

What I am really asking is, are we ready to accept Ron Edmonds' premise that all children can learn? Edmonds said, "We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us; we already know more than we need to do that; and, whether or not we do it must finally depend on how we feel about the fact that we haven't so far." He hints that the lack of achievement of some students is a political issue rather than a genetic issue in that the schooling of some students has not been important to us.

For a center to work, it needs to examine such issues as:

Ascription. Ogbu's research shows that schools, thus far, have succeeded because, historically, the function of education has been to socialize students to willingly accept the adult roles that are ascribed to them. That is, some students are educated to assume high status roles and leadership positions while, at the same time, other students are educated to assume low status positions. Students find this out the first day of the first grade when some are made blue birds and others are made red birds and some are made robins. They know what has been ascribed to them. We tell them overtly and covertly what roles they have.

The center must deal with collaboration. This could be done with existing labs, professional organizations, institutions of higher learning, and local school districts.

Governance of the center—if the center is to be administered as has been suggested on page 94 of "Education Research, Development, and Dissemination: Reclaiming a Vision of the Federal Role for the 1990s and Beyond," the priorities and policies will not be set by the people who are most affected. Their involvement, according to this model, is nonexistent. What we know about change theory tells us that when people are involved in the change process, they are most likely to change if they play a role in the process. Special efforts should be made to connect with scholars of color and to examine much of their research. Unfortunately, too many times, their research is discounted.

Proposals for grants—before requests for proposals are let, there must be some assurance that minority researchers and practitioners have an opportunity to participate.

Funding—will the center be funded at such a level that people will say that this is serious business? Will it be funded with new money or taken from existing programs?

Dissemination—who is our primary audience? We know that most classroom teachers are unaware of much educational research. Some method of making sure that research findings are disseminated and, we hope, used by classroom teachers and school administrators is, to me, the bottom line.

Could we try to make sure about that dissemination and maybe use computer hook-ups with local school districts so that information is more readily available or a bulletin board on one of the computer networks? More use could be made with technology through the use of satellite dishes, computer conferencing, teleconferencing, and interactive television.

What about summer think tanks for teachers where they share their successes and work together to develop new ways of teaching? Suppose we had similar think tanks for students? We could have regional schools where students have an opportunity to work together with teachers who have been most successful with minority students.

What about parents? Why not have a parenting division where you look at areas such as child development and nutrition?

Seven, we should look at education and look at this as an equity based model that has been developed at the University of Michigan that looks at four dimensions:

One dimension is access where efforts are made to have equitable representation of students, staff, and parents in all parts of the school environment.

Another is process where activities are planned to help create a fair and humane environment. Staff and students are not discriminated against in promotions and assignments.

Third is achievement where programs and activities can help lead to the successful completion of personal and academic goals. Educational outcomes should not be predicted by the race of the children participating in the process. The basic premise underlying this dimension is that all students can learn the next level beyond that which she or he already knows.

The fourth dimension is transfer where programs, projects, and activities are implemented that help transport the knowledge and

skills gained in school into equal pay, power, privilege, and prestige.

Unless students can see available educational or employment opportunities, they will not see any value to schooling.

This concludes my testimony. If you have any questions, I will be most happy to answer them. Again, I would like to thank the committee members for inviting me to testify.

[The prepared statement of Charles D. Moody, Sr., follows:]

TESTIMONY

OF

CHARLES D. MOODY, SR.
VICE PROVOST FOR MINORITY AFFAIRS
THE UNIVERSITY OF MICHIGAN

BEFORE

THE SUBCOMMITTEE ON SELECT EDUCATION

OF

THE COMMITTEE ON EDUCATION AND LABOR

U.S. HOUSE OF REPRESENTATIVES

CONCERNING

CENTER ON THE EFFECTIVE SCHOOLING
OF DISADVANTAGED STUDENTS

SEPTEMBER 29, 1988

TESTIMONY: CENTER ON THE EFFECTIVE SCHOOLING OF DISADVANTAGED STUDENTS Page One

I am Dr. Charles D. Moody, Sr., Vice Provost for Minority Affairs in the Office of the Provost and Vice President for Academic Affairs at The University of Michigan, Ann Arbor.

Thank you for inviting me to testify before the Subcommittee hearing on the proposed Center on the Effective Schooling of Disadvantaged Students. The concept is long overdue. Demographics, specifically the fact that our schools' population in the 21st century will be heavily minority, makes the idea of such a center imperative.

The idea of such a Center has been discussed by other groups:

The National Alliance of Black School Educators (NABSE) has made the establishment of a research center that focused on Black education a high priority. They also plan to develop demonstration schools that use the research and disseminate the findings through their membership. Summer training academies have already been established where the members have an opportunity to learn about successful models for educating Black students.

At The University of Michigan we have developed a concept paper that is similar. Our purpose at The University of Michigan is to discover the factors that are important to being an academically successful student of color and looks at a model that goes beyond the classroom. We will examine:

1. What environmental factors in the school, home, and community influence minority youth and how they feel about education?

2. What teacher behaviors do we find in the classroom interactions that are most successful with the student of color?

3. What do we know or need to know about child development that will help students achieve? We will examine cognitive and intellectual influences on academic success.

4. What and how do personal and social issues impact the educational success of minority youth?

TESTIMONY: CENTER ON THE EFFECTIVE SCHOOLING OF DISADVANTAGED STUDENTS Page Two

After identifying and collecting research that is available, we will identify gaps and encourage scholars and their graduate students to investigate the areas we find lacking. Dissemination and testing of our findings will take place in local school districts where we have developed a Superintendents' Forum that meets on a regular basis to address issues that impact on the education of minority youngsters.

There are four questions that are raised by the proposed Center on Effective Schooling of the Disadvantaged Students:

1. What do you mean by disadvantaged? Are you talking about urban minority students or are you talking about any student who is not achieving? I say this, because without a working definition of disadvantaged, the scope of the Center could become so broad that it merely becomes another research institute. The term disadvantaged leaves a lot of room for interpretation as to what one's disadvantage is. All of us have some disadvantage. It just depends on who is making the judgment. Further, to some, the term has negative connotations.

2. What would be the central purpose? Is it to become a paper tiger where researchers write research papers for other researchers? Or is it to become a Center whose primary audience will be school teachers or others in the field -- the ones who are closest to the students?

3. How will the findings be disseminated and used? More specifically, how will research be translated into practice? How will teachers, or other individuals that are closer to the students, use the findings of the Center or its facilities?

4. How willing are we to get rid of what we know isn't working? Are we really willing to examine and help educators implement innovative ways of educating students such as:

   Restructuring the school day and flexible scheduling,

   Developing collaborations with institutions of higher education, especially teacher education programs, such as the George School project, in Ypsilanti, Michigan, that is a collaborative effort with Eastern Michigan University and the Ypsilanti Public Schools,

Accepting multiple measures of intelligence, that is, realizing that intelligence can be shown through other ways than cognitive, such as musical, athletic, and artistic,

Developing more partnerships with businesses,

Pushing higher-learning activities for minority youth rather than the usual remedial materials they have,

Suggesting that schools pay attention to learning styles,

Helping teachers learn different teaching strategies such as cooperative learning,

Improving working conditions in urban schools so that teachers have more prep time, better school buildings, less paper work, and smaller teacher/student ratio?

What about teachers as researchers?

What I am really asking is: Are we ready to accept Ron Edmonds premise that all children can learn? Edmonds said, "We can, whenever and wherever we choose, successfully teach all children whose schooling is of interest to us; we already know more than we need to do that; and, whether or not we do it must finally depend on how we feel about the fact that we haven't so far." He hints that the lack of achievement of some students is a political issue rather than a genetic issue in that the schooling of some students has not been important to us.

For such a Center to work it needs to examine issues such as:

1. ASCRIPTION. Ogbu's research shows that schools, thus far, have succeeded because historically the function of education has been to socialize students to willingly accept the adult roles that are ascribed to them. That is, some students are educated to assume high status and leadership positions while, at the same time, other students are educated to assume low status positions. Students find this out the first day of the first grade when some are made blue birds, others are red birds, and some are robins. We tell them overtly and covertly which roles they have.

SEP 18 '89 11:03 OFFICE OF INTERGOVT RELATIONS P.04

TESTIMONY: CENTER ON THE EFFECTIVE SCHOOLING OF DISADVANTAGED STUDENTS Page Four

2. COLLABORATION. This could be done with existing labs, professional organizations, institutions of higher learning, and local school districts.

3. GOVERNANCE. If the Center is administered as has been suggested on page 94 of "Education Research, Development, and Dissemination: Reclaiming a Vision of the Federal Role for the 1990's and Beyond," the priorities and policies will not be set by the people who are most affected. Their involvement according to this model is nonexistent. What we know about change theory tells us that when people are involved in the change process they are most likely to change if they play a role in the process. Special efforts should be made to connect with scholars of color and to examine much of their research. Unfortunately, too many times their research is discounted.

4. PROPOSALS FOR GRANTS. Before requests for proposals are let there must be some assurance that minority researchers and practitioners have an opportunity to participate.

5. FUNDING. Will the Center be funded at such a level that people will say that this is serious business? Will it be funded with new money or taken from existing programs?

6. DISSEMINATION. Who is our primary audience? We know that most classroom teachers are unaware of much educational research. Some method of making sure that research findings are disseminated and, we hope, used by classroom teachers and school administrators is to me the bottom line.

   Could we try computer hook-ups with local districts so that information is more readily available or a bulletin board on one of the computer networks? More use could be made with technology through the use of satellite dishes, computer conferencing, teleconferencing, and interactive television.

   What about a summer think-tank for teachers where they share their successes and work together to develop new ways of teaching?

SEP 28 '88 19:04 GOVT RELATIONS P.02

TESTIMONY: CENTER ON THE EFFECTIVE SCHOOLING OF DISADVANTAGED STUDENTS Page Five

Suppose we had similar think-tanks for students? We could have regional schools where students have an opportunity to work together with teachers who have been most successful with minority students.

What about parents? Why not have a parenting division where you look at areas such as child development and nutrition?

7. Examine an equity based model we developed at The University of Michigan that looks at four dimensions:

   ACCESS - where efforts are made to have equitable representation of students, staff, and parents in all parts of the school environment.

   PROCESS - where activities are planned to help create a fair and humane environment. Staff and students are not discriminated against in promotions and assignments.

   ACHIEVEMENT - where programs and activities can help lead to the successful completion of personal and academic goals. Educational outcomes should not be predicted by the race of the children participating in the process. The basic premise underlying this dimension is that all students can learn the next level beyond that which she/he already knows.

   TRANSFER - where programs, projects, and activities are implemented that help transport the knowledge and skills gained in school into equal pay, power, privilege, and prestige.

Unless students can see available educational or employment opportunities, they will not see any value to schooling.

This concludes my testimony. If you have any questions, I will be most happy to answer them. I want to thank the members of the Subcommittee for inviting me to testify before you.

Mr. OWENS. I thank both of you gentlemen who represent the world of scholars in this area and are certainly well-qualified to speak on this subject.

Dr. Hawley, you say that the research center is an inadequate response, and I thoroughly agree. I don't agree that it is just another response. It could be more than just another response.

In the mix of strategies which you describe, isn't there great danger of dissipation of effort? We could go on and on spending unlimited amounts of money, unlimited amounts of very good research work, et cetera but without some kind of focus and without some kind of coordination, it will not have any impact. Can you comment for a minute about how you would bring this mix of strategies together and focus to get some results or to maximize the results of the efforts?

Mr. HAWLEY. That, of course, is a very good question. My view of that is that you start with the Secretary. You would create within the office of the Secretary a small office or task force concerned with the quality of education for the disadvantaged.

That group would identify in a planning effort the range of activities that are underway, set goals, work with constituent groups, et cetera to develop a comprehensive plan for the utilization of these resources. We are talking about billions of dollars that are being aimed at the disadvantaged. I think I would argue that a lot of that is dissipated. We don't coordinate Title I programs with special ed programs, for example, and the like.

There is much to be learned from those operating programs about ideal models. There is much to be learned—even those mechanisms might be used to do some of the things that you identify in your report, that is, to create models and test them. So, there are many vehicles.

The problem is, as you suggest, to focus them. I am afraid there is no substitute for commitment here except insofar as one might build a set of advisory activities to bring into the decision making process constituent groups. So, my answer is that it starts from the top down. Certainly, a role for a center would be to pull some of this together, but a $2, $3, or $4 million center is still not going to be able to do all we need to do in this area.

Let me say one more thing, Mr. Chairman, about that. One of my concerns about—I understand the logic of the model that you identify in the report, but I think we also have learned from past experience that because of the severity of the problem, the search for the immediate answers to the problem overwhelms the search for long-term answers, and many of us in the research community are concerned that we build the treasure chest you talk about, that we continue to replenish it with understanding of cognitive development and the like which is not likely to happen when all the pressure is placed on developing a short-run answer to the problem.

Mr. OWENS. How is the content of the treasure chest of models and research to get down to the teacher in the classroom if we leave it, as you have left it, saying that there is no substitute for commitment. Commitment hasn't done very much. There must be some better answer than to expect commitment. Are you saying we can't structure it better to compensate for too little commitment?

Mr. HAWLEY. I beg your pardon. I didn't mean to imply that commitment was a substitute for structure, but it is, in some ways, even more important than the structure.

Mr. OWENS. I would agree, but it may not exist. The Judeo-Christian tradition is not as strong as it used to be.

Mr. HAWLEY. I understand that. I would like to have a baseball bat, too, to reinforce commitment, but the particular notion here, I think is that—well, you are quite right. There are many mechanisms for making those linkages. Dr. Moody suggested, for example, the importance of collaborative research and development projects with schools and teachers. The ERIC system with which you are so familiar is important, and that system needs an overhaul.

So, in fact, one could identify the set of—you know, one cannot easily go to that treasure chest now and find answers to the questions that we are now addressing, because that is not the way we have thought about putting that information together, and I think that is possible.

The role of universities—we do have laboratories and university centers and so forth all of which have important outreach functions, and those should be reinforced and supported. The ultimate disseminator of this information is teachers and administrators themselves.

Again, as Dr. Moody pointed out, the teachers are the key to this. Dissemination in and of itself is not enough. So, my view is that we need to be involving teachers right in the research process, right in the dissemination process to its ultimate conclusion.

Mr. OWENS. Dr. Moody, what practical steps can be taken to accomplish that? What can the Federal Government do to facilitate the involvement of teachers and administrators in the process of delivering the results of research and development and applying it?

You say, and I agree, that we don't need more studies. I am not sure we don't need any more, but the general nature of that statement I would accept. The general tone of it is correct.

We do need more development and more application of what exists, more engineering. How do we do that? How do we get that down to the teacher in the classroom? How does the Federal Government help to do it?

Mr. MOODY. I think one of the things is that there may be some clear mandates to the existing centers and to any new centers that that is, in fact, a charge to that center to make sure that teachers and students and parents and others are involved in the process so that there is some kind of dissemination. I think we have to begin to look at the technology and how we can use that technology to have interaction with teachers and administrators.

Also, if the center is not viewed as a research center where new knowledge is developed but where things that are already in place are identified and maybe beginning to look at the efficacy of those kinds of things and transmit those. You have large teacher organizations. You have many other kinds of organizations. Through those memberships and working with them and the Federal Government encouraging those organizations to have academies and to do as a part of their meetings training and workshops around that and spend more time dealing with the mission of the organizations

rather than the organization, if we can really get people to begin to do that.

There are some parent organizations. There are some independent groups that are doing some research around these issues such as the Black Child Development Institute and other organizations that are looking at this. How can we tie these in and make them feel a part of the process?

I think what has happened is that we have developed a lot of paper tigers. People write well, and they publish in their scholarly journals. We all are guilty of that, but only five or six of us read those journals. So, we ought to maybe try to get this to some of the popularized vehicles such as magazines and other publications that people read.

I remember some person commenting about a tenure review when the person published in Woman's Day. One of his colleagues said that is not something that is scholarly, but eight million people will read that. I guess we ought to begin to get people to start to focus on impact of these things and try to get them out and use some of the vehicles that we have. I don't think we have been really using the vehicles.

We have used the excuse that it is not mainstream and that that is a legitimate reason not to use things that will get at the real purpose and mission of what we are trying to do.

Mr. OWENS. So, Professor, are you saying that the Federal Government should have popular publications? How does the Federal Government help this situation?

Mr. MOODY. Where the Federal Government comes in is just to make sure in its charge to entities that it is funding that it is clear that you expect that some effort is made for these findings to be translated into practice. So, I guess when you fund things, that has to be a part of that charge to those entities, that you expect them to make every effort to be able to translate or see that these are translated into practice.

Mr. OWENS. That means you have to make the budget available for that, too.

Mr. MOODY. Right.

Mr. OWENS. While I have you, Dr. Moody, you commented on some proposals that had been made by the National Black Educators or the Research Institute, and you also commented that the governance of the structure that we propose is flawed in that we are not providing for representation by the people who are most relevant. You might have hit a very important point with respect to the governance that we propose in our report for OERI, the advisory committee for OERI. We didn't propose a governance structure for the proposed center or for any local county agent or entity that would be spun off from the center. We didn't get into that kind of detail.

So, I suppose you were commenting about OERI. Would you want to elaborate on that?

I would agree that in the categories of groups to be represented that we have laid out there, we ourselves, on looking at it again, are concerned about the fact that the kind of representation you are talking about won't be there. Do you have any recommenda-

tions about how we could get better representation? What would be your proposals?

Mr. MOODY. I think it should not be just representatives from the two major teacher associations and one from the national parent organization. Ms. Patera is there now, but she won't be there forever, and the national PTO association is probably 99 percent of the time white. So, I am saying that you look at some specifically minority organizations of national stature and make sure that the membership of this committee has some representatives from that.

I think it has to be by design, and it can't be left to chance.

Mr. OWENS. Write into it some requirement that there must be an appointment from certain organizations that represent black scholars and educators?

Mr. MOODY. And hispanics.

Mr. OWENS. Maybe a list of organizations that the President can choose from. But, that there must be one or two appointees from those.

Mr. MOODY. Right.

Mr. OWENS. Thank you.

I have one or two last questions which I will put to both of you. Dr. Hawley mentioned Japan, the concentric circles. I think you mentioned to my staff and you also mentioned here that the family, community, and school work together. Japan also has a federalized and centralized system of education.

Let's just talk for a moment about the family, and let me give you a worst case scenario, an extreme scenario which is more and more becoming common in the 12th Congressional District that I represent in Brooklyn. The family becomes zero or negative. If a mother is on crack or a father is on crack, basic problems in the family become something you want to get the child away from. At the same time, you don't want to get into all the problems that result if you really try to pull them out, but the family is not going to count for much, and you have to overcome some of the problems in the family.

You may have a situation where we have to face up to the fact that some entity of government, some level of government, or maybe all of them combined, is going to have to substitute for the family in the educational process. You can assume certain things. The school must make certain contributions and the community, et cetera.

Well, the community and the school are going to have to carry the full burden except for the warmth. Even a mother on crack can provide certain things that nobody else can provide, but in terms of the education of the child, it has to be totally school and community.

How would you respond regarding the Federal participation in that worst case scenario?

Mr. HAWLEY. That is a wonderful question, and I wish I had an answer to it. One fundamental answer to it is that we begin to address the problems which are the source of that instability. We don't accept that as a given that that is a way it will always be or needs to be.

There are things we know about and we can learn more about that will reduce the incidence of illegitimacy and the like. All those

factors—reduce the incidence of mental retardation, poor health of children, and so forth that will reduce the stress on families that cause marital breakup and all those things. That is a big issue, and you are quite right.

I think that there are things schools can do to create stronger links back into whatever mechanisms are available to the child. A school can't be the mother and the father of the child, but it can be the link. It can be the concept of the social service agent, if you will, linking to available programs and to attending to the needs of the child.

By the way, it is something the Japanese teachers do although they don't have nearly the demand on them in that regard as do many American teachers. The final thing I would say about that is that——

Mr. OWENS. Japanese teachers do what?

Mr. HAWLEY. For example, let's say a child is arrested—and they do get arrested for smoking. The police call the principal, the principal calls the teacher, the teacher calls the parent, and they go down together and try to figure out why this terrible thing happened. More serious kinds of problems, of course, are addressed in similar kinds of ways. That is to say, the teacher is seen by the society and is rewarded accordingly for being a part of the developmental process of the child. They see their role that way, and it is a concept of professionalism which I think we need to talk some more about, acknowledging that it is recognized both status-wise and salary-wise in Japan in a way that we don't here.

Mr. OWENS. Thank you.

Dr. Moody?

Mr. MOODY. The Federal Government should, in fact, work with those kinds of issues that it can do something about in trying to provide services to the family, but I think also the schools as well as the Federal Government have to make it clear that those things about the kid cannot be a justification for people not teaching that kid. I think we have so long used that as a justification that they come from a one-parent family and, as Barbara Sizemore said in a speech the other day, that means we can't teach anything to orphans.

Mr. OWENS. Yes. Well, I certainly don't want it to be used as a justification, but we all acknowledge that parenting has a role in education. If you take away that role, there has to be some compensation.

Mr. MOODY. Yes, and I think we have to get back to the notion of the extended family. Not everyone who has been successful had parents who were involved in their education. There may have been someone such as an aunt or uncle or grandfather or neighbor. I think we need the notion of community and family.

For me, one of those bottom lines is that we really have to believe in the educability of all children. We also have to understand that schooling and education cannot be used as a justification for adult economic inequalities.

Mr. HAWLEY. Mr. Chairman, the problems of meeting the needs of children who are disadvantaged is complicated by the fact that there is no institutional mechanism for pre-school children. There are lots of different programs, and the Federal Government in fact

exacerbates that problem by creating categories and mechanisms and incentives in its own organizational structures which discourage those interactions. Those programs were developed, perhaps, in a time when the need for that interaction, while it has always been there, was not nearly as great as it is today.

I think that whether it is this committee or the Congress in general, we really do need to take a new look at the implications for more children, especially children prenatal to age 5, of the things you identified and what implications that has for the way we deliver Federal programs, the incentives we create for States and local governments to bring about coordination.

The advocates for children like the Children's Defense Fund, for example, have their lives complicated enormously by the bewildering array—not so bewildering to them, because they understand it now—but there is a tremendous array of programs and actors and so forth they have to deal with in order to meet the needs of a single child, and we have to worry about that problem.

Mr. OWENS. I have one last question. I would like you to make a comment on the following. I was going to ask Mr. Finn to comment on this—we did ask him—but I would like you to comment.

Since more than two decades of awarding grants in accordance with the conventional standards and procedures of grantsmanship has failed to produce meaningful results for the principal targets of Federal legislation, the disadvantaged, it is imperative that the process of awarding grants be altered extensively. One important modification for consideration in awarding new OERI grants in general, and grants to assist the disadvantaged in particular, is the adoption of new additional standards for grantee capability.

I would like your comments on that statement. This is a proposed modification of criteria for determining grantee capability. We are not saying we should have only these new items added, but it should be integrated with the existing so-called point systems you are familiar with.

Item one, experience with and exposure to disadvantaged students, in other words, more than 20 percent disadvantaged student enrollment; the presence of an active recruitment program for disadvantaged students; evidence of institutionalized academic support programs for disadvantaged students—and I am talking about center awards which go to higher education institutions—prior experience in working with disadvantaged students at public schools; prior experience working with leaders in communities where disadvantaged students reside.

A second large category would be faculty research experience and demonstrated sensitivity. There would be such items as evidence of recent commitment of the department or the institution prior to applying for the grant; a significant percentage of the faculty of the same background as the disadvantaged group to be served; a substantial number of education department faculty members whose areas of specialization are relevant to the problems of the disadvantaged; a significant quantity of relevant papers, books, and other products have been produced by the faculty.

In item three, demonstrated board and executive awareness and sensitivity to the problem. This would include such items as some persons serving on the institution's policy board have backgrounds

similar to that of the disadvantaged students to be served; evidence of recent policy decisions and special initiatives which demonstrate concern for the disadvantaged; significant percentage of persons with disadvantaged backgrounds in executive and middle management positions; a significant percentage of the overall staff is of the same background as the disadvantaged group to be served; and, finally, a history of previous involvement of the institution with programs and projects which impact favorably on the disadvantaged group to be served.

What is your response to adding those kinds of items to the criteria with respect to the capability of an institution to carry out a particular grant?

Mr. MOODY. Can you do that today? I mean, I think it is great. I really feel that it is necessary. I think it moves away from the old boy network. It makes people who have been privileged to say other people are not mainstream to let them not be mainstream.

I think it changes the balance in the game and puts a new light on some things. It may have some spin-off effects that if the grants and things are large enough and enough people get refused, maybe it would change the institutions that will be applying for those grants.

So, it is more than just the impact of who gets the grant, but I think it may help to change the institutions, because I think when we look at this, we have to look at this as a continuum from preschool through faculty. In other words, what students get and achieve in K–12 education should be translated into higher education, so that may change the climate or corporate culture of that higher education institution so that they will begin to get more minority faculty and staff and administrators and students.

Also, that would put a different kind of credence and credibility to the research of many minority faculty, because, as I said earlier, a lot of the work of minority faculty is discounted. It is not mainstream, whatever that means.

I think it has great implications not only for the granting of the award, but it also has implications for changing the corporate culture of higher education institutions.

Mr. HAWLEY. Mr. Chairman, may I just comment on that?

Mr. OWENS. Yes, please.

Mr. HAWLEY. Let me acknowledge that not nearly enough of our energy has been devoted to this serious problem, but let me also challenge the notion that we haven't learned anything over these years that relates to the needs of disadvantaged youngsters. The Center for the Social Organization of Schools' at Johns Hopkins director is here today. That is an example of a center which has generated considerable knowledge related to the needs of disadvantaged youngsters and has implemented programs that have proven to be effective in their learning and induce equity and better race relations and so forth. Cooperative team learning is one such strategy.

We know a lot more about reading. We know a lot more about that, and so forth. I could do that list, so I don't want to suggest to you that we haven't learned anything after all these years.

I also, I guess, want to say that I reject the notion, as you would expect because I represent the American Educational Research As-

sociation, that we know all we need to know. On the other hand, I think there was a time when we did give more attention in the award of grants to commitment and to evidence of past experience, but even if we do that as we once did and perhaps even better than we once did, we also have to recognize, as Dr. Moody said, that this is a systemic problem that goes right to the roots of the number of black kids who are graduating from high school, who are going on to college, and who are choosing graduate school as a place to study.

One of the things that we should be doing is supporting minority scholars and not just through graduate work but also through post-doctoral work. I think we need, in other words, to build the cadre. There is a treasure chest there, if you will, that needs to be replenished and needs to be strengthened.

So, I want to come back to the idea, finally, that we need to think about all this as a system. Even the agricultural extension service in fact didn't do the basic research which they brought to the farmer. That was done by men and women in laboratories looking at germination of seeds and little test tubes and so forth.

There is a long chain that we need to find a better way to link together. Right now, our problem is to get a better flow in the front and to put much more emphasis on getting into schools in a supportive way.

Mr. OWENS. Thank you both very much.

Mr. MOODY. Thank you, sir.

Mr. OWENS. Our next panel is a rather large one. It consists of Dr. Linda Roberts, the project director of the Office of Technology Assessment of the U.S. Congress; Dr. B.D. Mayberry, Acting Director of the Carver Research Foundation, Tuskegee University; Dr. Dale Mann, professor and senior research associate at the Center for Education and the American Economy at Teachers College, Columbia University; Dr. Eric Cooper, Vice President of In-Service Training and Telecommunications at Simon and Schuster School Group; and Dr. Harriet Doss Willis, director of the Southwest Center for Educational Equity of the Southwest Regional Lab.

Welcome, ladies and gentlemen, and please begin, Dr. Roberts.

STATEMENT OF LINDA ROBERTS, PROJECT DIRECTOR, OFFICE OF TECHNOLOGY ASSESSMENT, U.S. CONGRESS

Ms. ROBERTS. Thank you very much, Mr. Chairman, for the opportunity to testify at this hearing on effective schooling of disadvantaged students. My comments will focus on findings from OTA's recent report, Power On: New Tools for Teaching and Learning, and the implications for at risk students and the opportunities for research.

OTA supports the need for more educational research and development, specifically in the area of new technologies for teaching and learning and for ties between research and the classroom. Such research can contribute to greater understanding of the teaching and learning process and bring special benefits for disadvantaged students.

Technology is an important resource for improving educational opportunities for these students, as your report shows, the opportu-

nities and the needs to individualize instruction, to accommodate different learning styles, and to strengthen communication and scientific and technological literacy. For example, technology can provide individualized practice for specific skills and individualized records of student progress, identifying misconceptions and gaps in understanding.

Interactive technologies give the student a sense of control and skill often not provided through other instructional resources. Moreover, at risk children can become experts in technology, an area that society values and in which they have not experienced failure.

Computer generated graphics, whole libraries of materials on interactive video disks, educational programming sent via television, cable, and satellite can enable these children to draw on a wide range of resources for learning. Using electronic networks for writing, at risk students can write for a purpose and communicate with their peers, reaching out beyond their immediate environment.

On other networks, they can conduct scientific experiments and in their communities, they gather data which they share with other students all across the nation. These examples demonstrate ways in which technology is contributing to learning in K-12 schools nationwide.

However, many at risk students have no access or very limited access to the wide range of capabilities offered by technology. A concerted effort must be made to assure that all students have access to powerful technology with appropriate, responsive, and innovative software and teachers who are able to use it effectively.

The new center should set a goal that at risk students have equal opportunities to use the technology and experiences that enable them to make learning an active and meaningful experience. The center must also focus on the role of teachers. Computers, though powerful, are not self-implementing. Investment in technology will be effective only if teachers receive training and support.

One of the most significant impacts of the use of computers in the classroom is the change they make possible in teaching style. With computers as teaching resources, teachers can find more time to coach their students, to individualize instruction, and to give students responsibility for their own learning.

While these are important overall, I believe they are most important for classrooms that serve youngsters who have critical learning and educational needs. We find that both recent research results and current demands for change in schools make the benefits of technology, research on technology and education look especially promising now. Cognitive science is helping us understand the process of teaching and learning.

We appreciate that a number of learning styles coexist, and we are beginning to understand how learners' preconceptions or misconceptions from early formal or informal experiences may affect their understanding, and we are understanding where there are stumbling blocks to learning in various content areas.

However, despite the fact that much has been learned, it is only a start, particularly with regard to at risk students. Research, the advancing technology, a growing base of technology in schools, and

teachers all willing to experiment create a window of opportunity for improving education. In this atmosphere, research and development has a greater chance to bear fruit.

Promising research directions include the development of intelligent tutors, integrated tools to help students move beyond low level tasks and concentrate on more demanding problem solving skills, and new assessment measures. Achieving these goals will require substantial long-term investments in R&D, closer ties between the research community and the classroom, and contributions from many fields.

The low level of Federal funding for educational technology R&D in the civilian agencies, an absence of a coordinated Federal policy, short-term commitments, and disorganized R&D efforts across agencies mean that educational technology research and development is not keeping up with rapidly changing technology. This and the issues surrounding appropriate funding and organization of educational research are areas that will require continued Congressional oversight.

The proposed center can be an effective agent for educational improvement. It can foster dialogue among teachers, administrators, and researchers as classroom needs and realities are tied to emerging research and technology applications. Additionally, the center could forge new links between research on at risk students and work with other federally supported centers.

I would add that such a center would need to have people who have technological expertise and experience as well.

OTA's work has shown the promise of technology for education. Let us hope that the promise can be fully realized.

We also hope that our report can be utilized in the reauthorization process in the next Session of Congress. We are particularly gratified by the response that we have received from the Congress, from State agencies, from local districts, from the industry that is concerned with developing responsive educational products for all students, and from the teachers themselves.

Thank you for the opportunity to present our findings this morning, and I will be happy to answer any questions you may have.

[The prepared statement of Dr. Linda G. Roberts follows:]

STATEMENT OF DR. LINDA G. ROBERTS
Project Director
Office of Technology Assessment

Testimony before
Subcommittee on Select Education
Committee on Education and Labor
U.S. House of Representatives

Hearing on Effective Schooling of Disadvantaged Students

September 29, 1988

STATEMENT OF LINDA G. ROBERTS

Good morning. Thank you for the opportunity to testify at this hearing on the possibilities and potential for the proposed Center on the Effective Schooling of Disadvantaged Students. My comments will focus on findings from OTA's recent report, Power On! New Tools for Teaching and Learning,[1] and the implications for at-risk students and the opportunities for research.

OTA's report clearly documents the need for more educational research and development. In particular, we emphasize the need to increase support for research, development, demonstration, and evaluation of new technologies for teaching and learning, and for ties between research and the classroom. Such research[2] can contribute to greater understanding of the teaching and learning process and bring special benefits for at-risk students.

For a number of reasons, technology is an important resource for improving educational opportunities for at-risk students. Technology can motivate, individualize instruction, accommodate different learning styles, and strengthen communication and scientific and technological literacy. Let me highlight some examples of effective uses of technology and their implications for effective schooling of disadvantaged students:

- At-risk youngsters have varying achievement levels, but many are out of step and behind their peers in curriculum subjects and some skills. Technology can provide individualized practice necessary to develop specific skills. For at-risk students, there is special value in practicing at one's own pace until the learning takes hold, rather than being moved along in lockstep with the rest of the class before mastery

1. U.S. Congress, Office of Technology Assessment, Power On! New Tools for Teaching and Learning, OTA-SET-379 (Washington, DC: U.S. Government Printing Office, September 1988). See also Report Brief attached.
2. This includes basic research in cognitive science and work in related fields.

has been achieved. At the same time, technology can easily provide records of student progress, enabling teachers to better understand students' stumbling blocks, gaps in learning, and misconceptions.

- For the student whose command of English is weak, or who may be perceived negatively by classmates because of past failures, the nonthreatening environment of the computer can be a great relief, a place where mistakes can be made in private and failure is temporary.

- The interactive nature of working on a computer gives the student a sense of control and skill, often not provided through other instructional resources. Moreover, at-risk children can become "experts" in technology, an area that society values and in which they have not experienced failure.

- At-risk students may not be behind in all subjects, but often they are placed in lower groupings when reading and related skills test low. The versatility of the technology enables students to excell in areas of strength; for example, one student, behind in traditional academic skills, became the class expert in computer graphics and his talent was essential in producing the class newsletter on the computer.

- Not all students learn the same way; some are better able to concentrate on materials presented via computer. Video and audio presentations of material provide alternatives for students with reading problems that make a print-based curriculum a constant source of frustration.

- Computer generated graphics, whole libraries of video materials on interactive videodisc, or educational programming sent via television, cable, or satellite are ways that children can draw on resources for learning.

- Difficult concepts are made more understandable through graphic and symbolic representations and manipulations of data, especially in the study of science and mathematics. Students using microcomputer-based laboratories have tools that allow them to see almost instantaneous results of their experiments, with, for example, heat and temperature, and frees them to concentrate on the scientific principles involved.

- Key strategies that are essential for reading, critiquing, and improving written work are being incorporated into software programs, which, when coupled with appropriate instruction, can enhance students' writing facility, interest, and skills. Students who succeed in their own personal communications often change their attitudes about reading, writing, and school. Through the use of electronic networks for writing,[3] at-risk students write for a purpose, communicate with their peers, and come to see that they can move beyond the limitations of their environment. One inner city Birmingham, Alabama, student was ecstatic when he

3. For example, the De Orilla a Orilla Project involves 20 classrooms in San Diego, New England, Puerto Rico, and Buenos Aires. Students in bilingual education programs communicate through writing to promote bilingual literacy. The BreadNET Writing Project involves 1,023 students, 60 teachers in 45 classrooms in rural schools across the United States, including several on Indian reservations. More recently, the New York State Teacher Resources Centers have become involved in a network project focusing on at-risk students. Although the network was intended originally for the exclusive use of teachers, in this project teachers have opted to open the network to specially targeted students who are provided their own "kid to kid" computer conference. The students have at least one class period a week of computer time in school to "talk" with other students about their communities, their problems, their goals, and daily activities. The students are developing not just a facility in using the computer, but also increased writing skills and "technology chutzpah" which greatly enhances their self-confidence.

was able to send his own digitized photograph with video camera and computer so that he and his story "went all the way to Detroit, Michigan!"

Through the National Geographic Kids Network, an electronic network and software database, youngsters measure acid rain and conduct collaborative research with other student scientists around the country. In doing so, they learn to appreciate themselves as contributers to solving problems of importance to their community and their country. Furthermore, in the process of communicating across States, towns, and regions, geography becomes a subject to be learned for reasons that are personally important to them. In these projects, disadvantaged students have access to outstanding resources and role models in science just as their counterparts in more affluent communities do.

These examples demonstrate ways in which technology is contributing to learning in K-12 schools nationwide. However, many students with limited English proficiency, those with low achievement scores, and those in less affluent schools have little or no access to the wide range of capabilities offered by technology.[4] Differences in technology use may further separate the worlds of advantaged and disadvantaged children. Although students in Chapter 1 programs may have access to computers, their experiences should extend beyond drill and practice exercises. A concerted effort must be made to assure that all students have access to powerful technology with appropriate, responsive, and innovative software and teachers who are able to use it effectively. The new Center should set a goal that at-risk students have equal opportunities to use the technology and provide experiences that enrich them and that make learning an active and meaningful process.

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4. See U. S. Congress, Office of Technology Assessment, "Trends and Status of Computers in Schools: Use in Chapter 1 Programs and Use With Limited English Proficient Students," staff paper, March 1987.

This Center must also focus on the role of teachers. Computers, though powerful, are not self-implementing. Investment in the technology will only be effective if teachers receive training and support. If teachers are to use technology tools effectively, they must be provided with training in the skills needed to work with technology, opportunities to see technology's potential demonstrated, support for experimentation and evaluation, and time for learning and practice.

One of the most significant impacts of the use of computers in the classroom is the change they make possible in teaching style. With computers as teaching resources, teachers find more time to coach their students, watching the learning take place, reinforcing concepts, explaining as problems arise, and urging students on. Most teachers find these activities the most rewarding, if challenging, aspects of teaching. Even if there are only a few computers in the classroom, students can be teamed to solve problems cooperatively, and to encourage peer tutoring. While these variations in classroom management techniques and teaching strategies — individualizing teaching, giving students responsibility for their own learning, peer tutoring, group problem solving, and teacher coaching — are not new, they can be facilitated and enhanced with computer and telecommunications resources. And they may afford special benefits to at-risk students, for whom traditional classroom techniques have not been successful.

OTA finds that both recent research results and current demands for change in schools make the benefits of research on technology and education look especially promising now. Research in the cognitive, social, instructional, and computational sciences is helping us understand teaching and learning better. We now appreciate that a number of valid learning styles coexist, and we are beginning to understand how a learner's preconceptions or misconceptions from earlier formal or informal experiences may affect understanding, and where there are stumbling blocks to learning in various content areas. Despite the fact that much has been learned, it is only a start, particularly with regard to at-risk students.

Research in cognitive science, developments in computer-based technology, a growing base of technology in schools, and teachers willing to experiment all create a "window of opportunity" for improving education. In this atmosphere, R&D has a greater chance to bear fruit. Among today's most promising research directions are:

- computer software that can make the services of an expert and sensitive tutor regularly available to the learner;
- applications that exploit the computer's ability to link multimedia resources, bringing video, graphic, and audio together to enhance curriculum materials and presentations;
- simulations, laboratory experiences, and increasingly complex microworlds that build student understanding through exploration and guided discovery;
- integrated tools and "intelligence extenders" that help students move beyond low-level tasks and concentrate on more demanding problem solving skills;
- new assessment measures that track learning, diagnose students' conceptual understandings, and evaluate the attainment of complex skills;
- design tools, "authoring systems," and "knowledge kits" that enable teachers to create and customize their own teaching materials; and
- new curricula based on a changing vision of skills students need in the information age, shifting emphasis from **what to learn** to **how to learn.**

OTA finds, however, that reaching the promise of these directions will require substantial, long-term investments in R&D, closer ties between the research community and the classroom, and contributions from many fields. The low level of Federal funding for educational technology R&D in the civilian agencies, an absence of a coordinated Federal policy, short-term commitments, and disogranized R&D efforts across agencies mean that educational technology R&D is not keeping up with rapidly changing technology. This and the issues surrounding appropriate funding and organization of educational research are areas that will require congressional oversight.

The proposed Center can be an effective agent for educational improvement. It can foster dialogue among teachers, administrators, and researchers as classroom needs and realities are tied to emerging research and technology applications. Additionally, the Center could forge new links between research on at-risk students with work at other federally supported research centers including the Learning Research and Development Center and the new Educational Technology Center. OTA's work has shown the promise of technology for education; let us hope that promise can be fully realized.

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OTA REPORT BRIEF

September 1988

Power On! New Tools for Teaching and Learning

Photo credit: Blue Earth Elementary School, Blue Earth, Minnesota

American public schools have acquired close to 2 million computers in this decade, along with a wide range of educational software. In 1981, fewer than one school in five had a computer. Today, almost all do, and over 90 percent have VCRs as well. In addition, distance learning projects are proliferating: 35 States have projects or plans to deliver instruction via satellite or other electronic communications systems. This dramatic growth reflects the desire of school districts, administrators, teachers, and parents to use new learning technologies.

Computers are widely distributed, and student access has improved. But most schools do not have enough computers to make them a central tool of instruction. U.S. public schools average 1 computer for every 30 students, but there are wide variations in availability of computers across districts and States, and between students in relatively poor schools and those in more affluent schools. School size is a major determinant—larger schools have proportionately fewer computers. Reflecting this, black students, who tend to be in larger schools, typically have less access to computers than do white students, especially at the elementary school level. Students with limited English proficiency have the lowest access of all. Overall, those students who use computers do so an average of little more than 1 hour per week.

There is no one "best use" of technology, but there are many promising applications. The varied capabilities of the technologies are key to their power. New interactive technologies are now contributing to improvements in learning (see box). They can play an even greater role by helping children acquire basic skills as well as more sophisticated learning strategies, so that they can continue to acquire and apply knowledge over their lifetimes.

Educational technologies are not self-implementing. They do not replace the teacher. Investments in the technology will only be effective if teachers receive training and support. But only one-third of the Nation's teachers have had even 10 hours of computer training, and most of it has been devoted to learning *about* computers, not how to teach *with* computers. Less than one-third of all recent education school graduates consider themselves prepared to teach with computers.

For most teachers, using computers makes their job more difficult at first, but few would choose to return to teaching without computers. If teachers are to use technology tools effectively, they must be provided training in the skills needed to work with technology, education that provides vision and understanding of state-of-the-art developments and applications, support for experimentation and innovation, and—perhaps most valuable of all—time for learning and practice. These elements should be a part of teacher preparation and inservice teacher training. As technology changes and research provides better understanding of how children learn, teachers will require continuing support.

There are over 10,000 software products on the market today intended for educational use in school or at home. Many are for drill and practice, although advances in technology have allowed development of more complex software applications. Distribution of software titles across subjects is uneven, but generic programs for word processing, data management, and desktop publishing offer teachers flexibility for a range of classroom uses.

Despite steady improvement, the quality of educational software could be much better. Increased capacity of hardware and advances in programming have removed many technological barriers, but economic risks in the market lead software publishers to play it safe and offer products that are familiar to most

The Office of Technology Assessment (OTA) is an analytical arm of the U.S. Congress. OTA's basic function is to help legislators anticipate and ... in for the positive and negative impacts of technological changes. Address: OTA, U.S. Congress, Washington, DC 20510-8025. Phone: 202-224-9241. John H. Gibbons, Director

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Effective Uses of Interactive Technology in Today's Classrooms

- Building basic skills through drills offering self-paced practice.
- Developing writing skills by facilitating the process of crafting ideas, revising structure, and fine-tuning one's work.
- Offering opportunities to develop strategies for problem solving.
- Providing new ways to understand abstract concepts in mathematics and science.
- Directing student discovery through simulations in science, mathematics, and social studies.
- Easing the collection, manipulation, and analysis of data for processing large amounts of information.
- Developing computer skills for general use and for business and vocational applications.
- Increasing access and communication opportunities for students with physical or other disabilities.
- Bringing teachers to schools in remote locations or to small groups of students wishing to study a subject not taught in their home school.
- Providing individualized instruction adjusted to each student's prior knowledge and rate and style of learning.
- Encouraging cooperative learning as students work together on computer projects in the classroom or on electronic networks across the continent.
- Easing some aspects of classroom management, such as recordkeeping, preparing instructional materials, and motivating students.

teachers. The result is a relatively homogeneous supply of software products that fall short of the technology's potential. Reliance on the private sector alone will probably not yield an adequately diverse, innovative, and responsive set of educational software products. Because affordable and effective educational software is critical to the success of interactive technology in schools, Federal, State, and local governments will need to play larger roles in support of software development.

Technology is changing rapidly, but educational technology R&D is not keeping up. The absence of a coordinated Federal policy, limited and short-term funding, erratic political support, and disorganized R&D efforts across agencies have resulted in delayed or lost opportunities. **A substantial investment in R&D is needed now to exploit more fully the power and potential of technology for education.** Among the most promising research directions are:

- intelligent tutoring systems that are responsive to the individual learner;
- applications that exploit the computer's ability to be a multimedia controller, enriching curriculum with video, graphic, and audio components;
- simulations, microworlds, and laboratories that extend understanding through exploration, manipulation, and guided discovery;
- integrated tools and "intelligence extenders" that help students move beyond low-level tasks and concentrate on more demanding problem solving skills;
- new assessment measures that track learning, diagnose students' conceptual understandings, and evaluate the attainment of complex skills;
- design tools, "authoring systems," and "knowledge kits" that enable teachers to create and customize their own teaching materials; and
- new curricula, based on the skills students need in the information age.

Research in cognitive science, developments in information technology, and schools and teachers willing to experiment, all create today's "window of opportunity" for improving education. At the current rate of investment, the Nation can expect continuing experimentation in some schools, steady but slow improvement in software, and spotty access to the technology by students. If the Nation wishes to accelerate realization of the educational potential of the technology, a greater investment will be necessary. Policymakers at all levels of government will need to focus their attention on four closely related areas:

- expanding the amount and capability of technology in schools;
- providing training and support for teachers;
- encouraging innovation in educational software; and
- supporting research, development, demonstration, and evaluation, with emphasis on ties between research and the classroom.

Copies of the OTA report, "Power On! New Tools for Teaching and Learning," are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325, (202) 783-3238. The GPO stock number is 052-003-01125-3, the price is $11.00. Copies of the report for congressional use are available by calling 6-2990. Summaries of reports are available at no charge from the Office of Technology Assessment.

Mr. OWENS. Dr. Roberts, could you just tell us a little bit about your background? Were you ever a teacher?

Ms. ROBERTS. Oh, yes. I was a classroom teacher in Brookline, Massachusetts, a reading specialist in rural Appalachia, a teacher trainer, and a university professor.

Mr. OWENS. Thank you.

Dr. Mayberry?

STATEMENT OF B.D. MAYBERRY, ACTING DIRECTOR, CARVER RESEARCH FOUNDATION, TUSKEGEE UNIVERSITY

Mr. MAYBERRY. Thank you, Mr. Chairman.

I am honored to have been invited to participate in this hearing of the Subcommittee on Select Education. I bring you greetings from Tuskegee University and its president, Dr. Payton.

My comments are restricted to the history of the cooperative extension system and its relevance to technology transfer in the public school system at all levels. It is important that we recognize the fact that the educational system in the United States is not all bad. Conversely, we must recognize the fact that we do have some problems, and some of the more common problems are summarized and published in American Education, Volume 10, number 5 and are included here.

International comparisons of student achievement, completed a decade ago, reveal that on 19 academic tests, American students were never first or second and, in comparison with students from other industrialized nations, were last in seven cases. Some 23 million America adults are functionally illiterate by the simplest tests of everyday reading, writing, and comprehension.

About 13 percent of all 17-year-olds in the United States can be considered functionally illiterate. Functional illiteracy among minority youth may run as high as 40 percent.

The College Board's Scholastic Aptitude Tests demonstrate a virtually unbroken decline from 1963 to 1980. Average verbal scores fell over 50 points and average mathematics scores fell some 40 points.

Both the number and the proportion of students demonstrating superior achievement on the SAT's, those with scores of 650 and above, have dramatically declined.

In the process of brain-storming in search for solutions to some of the problems in education, it has been suggested that the approach implied by the Agricultural Cooperative Extension system might hold promise for improving the public school system. With respect to the history of such a system, it is of benefit to briefly review the origin and the growth and the development and achievements of the Negro Extension as it involved Tuskegee University.

The beginning of Negro Extension work was essentially the arrival of Booker T. Washington in Tuskegee, Alabama in June of 1881. Once settled in his residence, his initial activities included a series of trips throughout the surrounding rural community to do needs assessment studies, and data from these studies provided the basis upon which the Tuskegee University program was initially

structured, including on-campus and off-campus formal and informal educational activities.

Basic activities, so far as the farmer is concerned, include the Farmers' Conference which is still going annually and the movable school. Movable schools moved about the rural communities in the area, conducting demonstrations on small and large farms on a pre-arranged schedule. For example, in the summer of 1906, over 2,000 people a month were reached by the movable school.

These initial activities by Tuskegee University continued to grow and received widespread acclaim as means of educating rural people.

In the fall of 1906, Seaman A. Knapp, special agent in charge of the farmers' cooperative demonstration work for the United States Department of Agriculture, visited Tuskegee University. In this visit, he talked with Dr. Carver and his staff about beginning a cooperative demonstration program for Negro farmers in the South.

Booker T. Washington seized this opportunity to link his successful but financial insecure agricultural extension operation with that of the Federal Government. This unit initiated what is now called a cooperative extension service.

The term "cooperative extension work" did not come into common usage until after the passage of the Smith-Lever Act in 1914. In this case, the definition of cooperative extension work is applicable to demonstrations and developments at Tuskegee University on November 12, 1906. Thus, the first cooperative extension program in the United States emerged at Tuskegee University, and T. M. Campbell became the first cooperative extension agent.

The cooperative extension program established at Tuskegee University in 1906 was the forerunner of the national cooperative extension system established in 1914 under the Smith-Lever Act. In a recent publication describing the story of the University of California extension program, 1913 to 1988, achievements were described thusly:

"For three quarters of a century, extension, the greatest adult educational effort in the world, has served as a conduit between the resources of the land grant university and the needs of the people."

This quotation is applicable nationwide, and the extension system of education and technology transfer may be adapted to the public school system at all levels.

Now comes the big question. What is unique about the educational ploys used by the extension system? The answer is two-fold. In the first place, I will venture to describe extension education as object education or maybe more appropriately object lessons in education. Elaborating further on objection education, it may be defined or described variously, with the help of the dictionary, as follows:

Object education is something that is capable of being seen, being touched, or otherwise sensed. It is something physical or mental of which a subject is cognitively aware. Object education arouses the emotion in an observer. Object education recognizes and highlights either goals, motives, purposes, or all three.

The influence of Tuskegee University is an object lesson in education. It is here probably that the university has had its largest

influence. Literally hundreds of the world's leading educators have visited Tuskegee and, impressed by the fine results secured from its system of vocational education, have advised the adoption of its principles elsewhere in four continents, for blacks, yellows, red, and white alike.

Even so far-reaching a movement as the general education board was first planned on the Tuskegee campus, and the Jeanes Fund owes its creation to the interest stimulated by Hampton and Tuskegee University.

What is the basis of this system of education? It is the correlation of knowledge and the actual needs of daily living with a view of character building, family support, and community service. Tuskegee found itself in the rural areas of the South where this principle was applied, particularly to the vocational needs of workers on the farms and in villages where conditions were somewhat primitive, but it is of universal applicability.

It involved the combination of classroom and shop work alike, that is, the academic and the practical types of instruction.

Secondly, extension agents or teachers are typically indigenous leaders. By indigenous here is meant living naturally in a particular region. That is not absolute.

Far more important here is indigenous in terms of socio-political culture and ability to relate to and communicate with clientele in the target area. The ability to relate to and communicate with the target clientele often proves to be far more valuable at any given time than technical or scientific knowledge of the subject relevant to the assignment.

In closing, what are the keys to the success of the extension system? One, identify the particular problems in question. Two, develop object lessons in education related to the specific problems identified. Three, identify indigenous agents, especially in terms of socio-cultural capability to communicate with and relate to the target area.

Thank you.

[The prepared statement of Dr. B.D. Mayberry follows:]

STATEMENT

of

DR. B.D. MAYBERRY

ACTING DIRECTOR, CARVER RESEARCH FOUNDATION

TUSKEGEE UNIVERSITY

TUSKEGEE INSTITUTE, ALABAMA

before the

SUBCOMMITTEE ON SELECT EDUCATION

COMMITTEE ON EDUCATION AND LABOR

UNITED STATES HOUSE OF REPRESENTATIVES

concerning

EFFECTIVE SCHOOLING OF DISADVANTAGED STUDENTS

September 29, 1988

Good morning, Mr. Chairman. I am B.D. Mayberry, Acting Director of the Carver Research Foundation and Professor Emeritus of Agriculture at Tuskegee University. Thank you very much for inviting me to participate in this hearing on the Proposed Center on the Effective Schooling of Disadvantaged Students.

In prior hearings, your committee and other committees of this Congress have documented the grave crisis facing our schools and our young people at this time. My purpose in being here today is to describe one approach to the problem of reaching the disadvantaged. This is an approach whose origins date back over a hundred years in our history. This model came about as a direct response to earlier crises in our history: the emergence of black Americans from 250 years of slavery and the impoverished status of our rural agricultural population. As a 50-year veteran of the teaching profession, it is my fervent hope that your committee may find in this example some insights to help meet the needs of today's disadvantaged populations.

What is the agricultural extension system and how did it get started? Agricultural extension is one part of this nation's Land Grant University system. This system was formally established on a national scale by five important pieces of federal legislation passed between 1862 and 1917. The Morrill Acts of 1862 and 1890 created the Land Grant University system. The Hatch Act of 1887 established the national system of state agricultural experiment stations, mandated to conduct "original and other researches, investigations, and

experiments." The Smith-Lever Act of 1914 gave us the national system of cooperative extension services, with a mission of transmitting the results of this research directly to the farmer. An amendment to Smith-Lever required extension to develop "practical applications of research knowledge." The Smith-Hughes Act of 1917 created the program of instruction in agriculture and home economics. The critical elements of the land grant system are, therefore, research, instruction, and extension.

While federal legislation institutionalized and provided financial support for these activities nationally, it did not originate them. Rather, they originated out of the need manifested throughout this nation for a way to improve the lot of rural farm populations.

Nowhere is this more dramatically demonstrated than in the history of my own institution, Tuskegee University. Booker T. Washington arrived in Tuskegee, Alabama in June, 1881. From the very beginning, he made a point of regularly visiting homes and churches in the surrounding rural communities. T.M.Campbell, who was to become in 1906 the first black extension agent, has written that Washington had two objectives in making these visits. The first objective was to find students. Washington met with the parents and urged them to send their youth to his newly-established school. Washington's second objective, in Campbell's words, was "to get first-hand information as to their needs in order that these needs could be

taken into consideration in the planning of courses of study beneficial not alone to the students but to the families and communities from whence they came."* I quote Campbell's words because I believe they encapsulate and epitomize the essence of what extension does--ascertain people's needs and meet them in a very practical way.

From this modest beginning, Washington developed--with the arrival in 1896 of Dr. George Washington Carver--a school on wheels, outfitted with seeds, fertilizers, and tools to carry out practical demonstrations for farmers and homemakers. By 1906, the wagons reached over 2000 people per month. Regular farmers' conferences were held at the school. These activities were well-established several years before the passage of the Smith-Lever Act in 1914, creating the Cooperative Extension System.

T.M. Campbell's 1936 book, The Movable School Goes to the Negro Farmer, provides a marvelous example of what this early extension work meant to the rural poor.

> "In January, 1912, Dr. Washington spoke to a large group of farmers at Fort Davis, Alabama, on cutting out the mortgage system. He asked the farmers how many of them carried mortgages. With few exceptions, all held up their hands. He said, 'If I give you some advice as to just how to eliminate this kind of thing, will you take it?' We all agreed that we would and he gave us helpful information which we promised to follow. When I went home I tried to do the first thing that he had suggested; that was to make preparation for a year round garden. To do this I laid out a garden and planted it according to his advice. I built a hen house, made some coops, and my wife began to raise chickens and was soon

*T.M. Campbell, The Movable School Goes to the Negro Farmer, Tuskegee, Alabama, 1936, p.80.

able to sell some. We had at that time four milk cows that were not giving enough milk for table use. After I built a pasture and began feeding my cows I sold from five to six dollars worth of butter each week. In the meantime, I found some old tools and put them in repair, so I didn't have to buy any new ones for making the crop that year. At nights I sold blackberries picked in the day by my children, who were too small to work in the field. We sold vegetables from our garden during the early summer.

"These sidelines gave me a cash income so that I did not have to borrow from merchants or the banks. In the month of August, I sold $70.00 worth of watermelons and by keeping busy planting something all the time, as I had been instructed, I made a larger crop that year than ever before. I was paying only one and a half bales of cotton for rent, and yet this was the first time in all my life that I didn't owe anyone at the end of the year; and I haven't had a 'ration day' since. Finally, the war came on and cotton went to thirty-five cents a pound and peas to five dollars a bushel. That year I deposited nine hundred dollars and set aside four hundred dollars extra to run my crop the next year. When the war ended, I had saved $3,468. I constantly kept Dr. Washington's speech before me as a guide. In 1919, I bought 158 acres of land from a white banker and paid $2,450 cash for it. The next year, I spent $450 in repairs on my home. I also spent $140.00 in ditching the farm. Since that time, I have not been without a bank account. At present my property is valued at $7,810.00."*

Today, the U.S. Department of Agriculture's Cooperative Extension System extends to all fifty states. The mission of extension has grown far beyond production agriculture to encompass a much broader program. The U.S. Department of Agriculture defines the modern extension system as follows:

"Cooperative - A nationwide network of educators who serve in the national interest.

"Extension - Extending research-based knowledge and technology from the laboratory to the community.

Ibid, p.89-90.

"System - A unique educational system that draws on the expertise of Federal, State, and local partners."*

Responding to the vast changes in American agriculture, the Extension Service this year identified eight national priority initiatives to guide its work in the coming years. These initiatives are: (1) alternative agricultural opportunities; (2) building human capital; (3) competitiveness and profitability of American agriculture; (4) (4) conservation and management of natural resources; (5) family and economic well-being; (6) improving nutrition, diet, and health; (7) revitalizing rural America; and (8) water quality. These initiatives illustrate the very broad scope of the modern extension system.

The consideration of extension as a model for the education of today's disadvantaged urban youth brings extension full-circle. Our historical review has shown that the Tuskegee model--forerunner of the modern extension system--emerged pragmatically in the rural South from the need for a way of reaching a people ravaged by the brutality of slavery and reconstruction. In other parts of the country, similar movements emerged to meet the needs of the rural poor.

Today's poor urban youth--cut off from the society at large and often lacking basic skills for survival in any but an underground economy -- may be the modern equivalent of yesterday's freed slave. For those youths ensnared in the culture of drugs and violence, how can we even describe them as free? I am reminded of the words of the

*U.S. Department of Agriculture Extension Service, Cooperative Extension System National Initiatives, Focus on Issues, Washington, January, 1988, frontispiece.

book of Revelation: "Remember, therefore, from whence thou art fallen and repent and do the first works or else I will come unto thee quickly..."* Let me say a word about "first works".

Two kinds of education were provided in the earliest extension model, as practiced at Tuskegee throughout the early part of this century: one was technical education; the other was moral education. The technical education transmitted to the farmer information on growing better crops, building homes, acquiring land. The moral education taught the value of saving money. It taught cleanliness, orderliness, piety, values which sound quaint in our modern permissive society.

Grant me the license of a septuagenarian to suggest that the real meaning of the historical extension example goes far beyond the mechanical aspects of extension agents carrying the insights of research to farmers. Philanthropist Anson Phelps Stokes, an early trustee of Tuskegee Institute, wrote in 1931:

> "And what is the basis of this system of education? It is the correlation of knowledge and the actual needs of daily living with a view of character-building, family support and community service."**

The history of the agricultural extension system provides a vast storehouse of information which can be extremely useful to education researchers. As we apply these lessons to our contemporary problems, however, it is important that we view extension as more than an effective method of reaching people. Rather, we should

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*Revelations 2:4-5.

**Anson Phelps Stokes, Tuskegee Institute - The First Fifty Years, Tuskegee Institute Press, 1931, pp.43-44.

return to our "first works" and include in our research and extension elements which inspire "character-building, family support and community service."

Thank you for affording me this opportunity to share in this discussion today.

Mr. OWENS. Thank you.

I may have a whole list of questions to submit to you and may use you as a future resource as we continue to develop this idea of what we call learning grant universities, using educational agents instead of county agents. There are a number of different ideas that are being tossed around.

Dr. Dale Mann?

STATEMENT OF DALE MANN, PROFESSOR AND SENIOR RESEARCH ASSOCIATE, CENTER FOR EDUCATION AND THE AMERICAN ECONOMY, TEACHERS COLLEGE, COLUMBIA UNIVERSITY

Mr. MANN. Thank you, Mr. Chairman.

I came down this morning from New York City, and I am aware that we share an interest in the public schools in the City of New York. I think among other things that New York demonstrates is on a local basis what is clearly the case on a national basis. We could lose the public schools in the United States.

A recent Harris poll, as recent as this month, has demonstrated that 51 percent of the parents, if they had a choice, would take their children out of the public schools.

Mr. OWENS. In New York or the nation?

Mr. MANN. That is on a national basis, sir. Fifty-one percent, if they had the resources, would not have their children in public schools.

I think what that represents, among other things, is the society choosing how it wishes to deliver education. We have used the public schools for the last 100 years. We may not choose to use the public schools in the future, and I would believe that would be extremely dangerous.

I know that the full committee is aware of what we have created over the last decades in a kind of a second strike, second chance school system. It is a school system that has JTPA trainers, that has business and industry, that has community colleges, that has provided a second opportunity but which may now, with some new developments, displace the public schools system.

Part of the reason that is happening is because the enrollment in American public schools is becoming more concentrated in children from low income families. It is becoming more black, more brown. As that is happening, those children are more high needs and, therefore, they are more high cost.

There is a substantial part of the public that believes that those high needs and high cost kids achieve less. Therefore, while they get less, they are more expensive to educate. There is considerable resistance about trying to improve a school system that works with what some call the undeserving poor.

In any case, those young people don't do very well in the public school system, and the public school system doesn't do very well with them. The price of failure, again to go back to a New York City example, the dropout rate of just two New York City high schools in any Congressional district in the city will produce 1,000 drop-outs a year, and those 1,000 kids hanging around on the streets of Los Angeles or New York or Atlanta will cost that public $12 million in a single year for 1,000 kids.

We are losing every fourth child to the drop-out circumstance in the United States. We are losing the same thing as the entire pupil population of the State of Minnesota put together, K to 12, the whole thing gone every year. It is the same thing as today if 65 school buses were to disappear and not make it to the public school. Sixty-five school buses disappearing from the system would be a crisis. The fact that these kids have dropped out is regarded as something of concern, but it is not yet a crisis.

Part of it has to do with the fact that those kids are hard to teach, that many believe that they don't learn much. I would submit that there are some alternatives, that young people do learn, and that among the ways they learn and learn very powerfully is through technology.

You can look at MTV and you can put an objective test on the words of any one of the top ten songs before any number of teenage girls, and they will get 100 percent right. You can go into an appropriately engineered electronic learning environment, go into, for example, a video arcade, and take a look at the persistence, take a look at the stability of that learning, take a look at what happens in terms of the attention span, what happens in terms of the availability of young people to learning in an appropriately engineered environment and come to some very different conclusions about technology.

Now, a lot of people rage against commercial television, and I suppose I would join that, but the question is not whether or not we object to it. The question is whether or not we can turn that to useful social purposes, and I suggest that it is entirely possible to load that very powerful visual medium with the kinds of values that animate the members of this committee.

Part of the reason that I have formed that conviction has to do with experiences that I have had with IBM. I remember being in the delta country in the northeast part of the State of Mississippi where there was an adult literacy interactive video disk, and it is the same interactive that is back there on the IBM gear which the company has been kind enough to make available.

The morning I saw it, there was a lunch break, and the technicians were trying to clear the room of these people who were there because, as adults, they couldn't read and they couldn't compute and they couldn't function in that society. There was one woman who wouldn't get up. She simply kept sitting at the screen.

I and a small group of people walked over and stood behind here and someone said to her, excuse us, but what are you doing? This woman who was clearly very poor turned around and looked up at us and there were tears in her eyes, and she said, my children can read and my grandchildren can read, and this thing is teaching me to read.

Now, that is a person who didn't make it in the existing public school system and had not been taught successfully for whatever reason, but the curriculum delivered through electronic means has an entire different capability. The PALS curriculum shows that it is possible for previously illiterate adults to learn six times faster. In 4 months of exposure, they can catch up 27 months of reading.

I have, in connection with IBM, been developing an interactive that we have been using with a JTPA audience of drop-outs in

Austin, Texas. They are previously unemployed— some would call them unemployable—illiterate high school drop-outs who are nonetheless very interested in money, and they are very interested in their own personal finances and the prospect that they may have some role to play there.

We have built an interactive video disk system that uses the interest of young people in money to brush up on some basic math skills, some basic computational skills, and also to change their attitudes about their own personal responsibility and their own life coping skills.

Next month, there will be a press conference here in Washington, D.C. at which a drug abuse video interactive will be introduced from an association of secondary school principals. It is a kiosk application designed to sit in the hallways of a public high school and to give kids an opportunity to make the kinds of choices that, unfortunately, are too often available to them.

The difference an interactive makes is it provides a visual, immediate, and dramatic consequence to the choices they make. That application will be called Targets.

The choices that we have and the choices that will be before a new center have to do with whether or not they are going to pay attention to the relationship between the needs of these kinds of learners, previously low achieving disadvantaged young people. We know some things about the way they learn and the way they should be taught and the possibilities of this technology.

Whether or not in the public school establishment we make those choices, they are being made. Business and industry are moving very rapidly past the use of stand-up/sit-down training sessions with a trainer with the inevitable stack of overheads droning through somebody's three ring notebook. Business and industry are now moving to interactive video disk training, and they are discovering that they can get their trainees to learn one-third more content in one-third less time.

If we could provide even a fraction of those gains, a third more content in a third less time, I suggest that we would be able to make some dramatic breakthroughs in the purpose of public schools.

The New York City public schools this year have a budget item. They will buy 9 million pieces of chalk. One of the questions that I have for Chancellor Green is, how many children do we believe are going to grow up to work with chalk? Yet, the board will buy 9 million pieces of chalk.

There is a Federal role here. It is a Federal role because the needs of the disadvantaged are not the preferred market for commercial publishers by and large. These kids are concentrated in school districts that are already the hardest pressed financially. Left to its own devices, the market will develop, as it has begun to develop, interactive video based curricula that are marvelously effective and that are pointed at gifted and talented, at high ends, and the most well heeled of the school districts in this country.

I believe that the Federal Government has a responsibility to make this technology available to the kids who are the neediest in this society. If we don't do it and if we continue to let the public schools be at risk, I believe that we are headed for a country which

is less just, which is much less productive, more angry, and more dangerous. We have an opportunity to do something about that.

I appreciate the opportunity to have commented about this this morning. Thank you, Mr. Chairman.

[The prepared statement of Dale Mann follows:]

DISADVANTAGED STUDENTS AND EDUCATIONAL TECHNOLOGY

A Statement Prepared for the Subcommittee on Select Education
of the Committee on Education and Labor,
U.S. House of Representatives

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This month, a Harris poll documented that 51 per cent of public school parents would take their children out of the public schools if they could afford it. It is possible to lose the public school system in the United States. The current institution is so weak that the "other educators" overwhelm it--the family educates (or tragically, it does not), the peer group educates, and the media educate. To make up for what schools have not been able to do, in the last decades we have had to build an enormous 'second strike' school system. JTPA trainers, community colleges, adult literacy programs, for-profit training, and increasingly business and industry are all part of that second strike school system.

Those institutions and others that are now on corporate drawing boards are ready to take over parts of the $185 billion-dollar-a-year business of the public school. At the same time, public school enrollments are becoming Blacker and Browner, which translates into more high needs and therefore more high cost students who, some believe, achieve less while costing more. The net result of those demographic trends, plus the perceived ineffectiveness of

the existing public school, is to make it increasingly more difficult to support a 'failed institution'. But losing the public school will make this a less just, less productive, more angry and more dangerous country. The price for not improving the public school---especially for the most needy--is staggering.

Every 1,000 dropouts on the streets of New York or Los Angeles cost the taxpayers $12 million a year and yet, each year, as many kids drop out as are enrolled in the entire public school system of the state of Minnesota. Every day, we lose 65 busloads of kids who never come back and, over their working lifetimes, those dropouts will cost the society more than a year's Federal deficit target, about $200 billion.

Can technology help? Compare what at-risk students learn in class with what they learn from MTV. A video arcade is a learning environment: the game experience teaches, and kids pay to learn. We might object to what is being learned just as some people rage against commercial TV, but the technology exists and it is powerful. The more important point is--can it be turned to socially useful purposes?

The break-through tools to do that come from micro-computers with the dramatic power of video. IBM's "InfoWindow" equipment is the premier example of what is possible. Their first educational application, "PALS," turns previously illiterate adults into readers six times faster than traditional instruction: students gained an average of 27 months of reading skills in only 4 months.

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But some young people lack not only academic preparation but basic coping skills for life. IBM and Interactive Inc. have developed an interactive videodisc course that takes a student through several months of real world decisions about their own money (Can I afford a car? Why bother to save? What about overtime? Why not run up credit card bills?) and uses that experience to build life skills and to reinforce basic computational skills. The program, "Moneymasters," has been tested in a hard-core environment of unemployed and generally unemployable former high school dropouts. The early results indicate that the disc experience is more powerful than a similar computer-assisted course or a printed text, skill gains are significant, and the same people who dropped out of traditional schools are enormously enthusiastic about video-disc based training.

The best industrial applications of videodisc show that learners master one-third more content in one-third less time. Those gains translate into huge savings for private enterprise and are part of the reason that GM and Ford are already using 16,000 interactive videodisc systems. Xerox, Toyota, and NCER each have 1,000 systems in place. The Army uses videodisc to teach the subtle, complicated art of leadership in 50 per cent less time than traditional techniques.

Currently, there are 250 videodisc-based curriculums available to public schools. Most are topics that appeal to the districts that can afford to purchase them. The unavailability of disc-based instruction for at-risk students is not unlike the common observation that in two short years, half

the homes of America will have personal computers--but which half? If market forces alone govern the availability of this technology, then the neediest children will have it the least and the latest.

The argument for disc-based instruction is a simple one--the technology harnesses the energy from the powerful visual media that already dominate the lives of youth --and it coincides with what we know about adolescents.

Teenagers are a tough audience. Even in the best of circumstances, teachers have to work very hard to overcome a set of attitudes that puts this group of students dramatically at risk:

A present orientation...teenagers ignore the long-term consequences of what they do. The future is Saturday.

The myth of permanence: the words of a popular song capture the belief, "I'm going to live forever, never going to die."

Adolescents are notoriously indifferent to probability. having driven while drunk one Saturday night, it's okay to do it again, and again, and again.

Peer pressure. The struggle to find one's self in the eyes of others come close to defining the transition from childhood to adulthood but it also makes teenagers enormously vulnerable.

Personalization. If teaching is to be effective with a group that believes it has seen everything and believes nothing, then that experience has to be directly relevant to their world, instantly responsive to what they do or don't do. The dramatic power of video, the storage and access capacity of

laser disc, and the intelligence of a micro-computer can be used to ratchet schooling for the disadvantaged to a new level of power.

But that will not happen without the Federal government. If the argument for using videodisc to reach disadvantaged students is centered on the power of the technology, there is an equally simple argument for the involvement of the Federal government in this area. It will not happen otherwise. The most disadvantaged students are concentrated in the districts that are hardest pressed financially. Without government assistance, these kids will never have the benefit of something that can move them. New York City will buy 9 million pieces of chalk this year, but how many students will grow up to work with chalk?

A Center on the Effective Schooling of Disadvantaged Students can make a difference, but only if it pays attention to the unique needs of these students, the possibilities of disc-based instruction, and its own obligation to foster a connection between the two.

Mr. OWENS. Thank you, Dr. Mann.
Dr. Eric Cooper?

STATEMENT OF ERIC COOPER, VICE PRESIDENT, IN-SERVICE TRAINING AND TELECOMMUNICATIONS, SIMON AND SCHUSTER SCHOOL GROUP

Mr. COOPER. Mr. Chairman, thank you for this invitation to testify. I and other New Yorkers support the work you have been doing in education.

At this point, Mr. Chairman, may I indicate to you that I have submitted written testimony which I would like to be entered into the record at this point.

My testimony today will focus on two interrelated issues, that is, research on promising factors related to instruction for low income students and the proposed Center for Effective Schooling of Disadvantaged Students which the Office of Educational Research and Improvement intends to fund in fiscal year 1989.

Before proceeding, I would like to introduce myself by indicating some educational activities I am involved with around this particular topic. Briefly, I have been working with urban school systems for the past seven years through the College Board and now with Simon and Schuster. The primary function of this work is to support and improve the achievement of students and improve performance by teachers. In addition, I serve as the co-chairman for the Ad Hoc Committee on Effective Schooling and, recently, I received the MacArthur Fenwick Foundation Award to improve literacy for urban middle school students through administrative and teacher training.

As I begin my brief presentation, I would like to indicate to you that there are some specific issues related to research in reading that I think are critical and I think need to be addressed. That data surrounds some of the following:

As Dr. Moody has so eloquently indicated, all students can learn, and I add to that all students can learn to learn with the proper mediations. Yet, there are some specific obstacles that are put in front of urban children, and they include the following:

Institutional attitudes of low expectations for students where one can pick up newspapers and read where superintendents in several areas of the country have expectations for students who graduate from urban situations of no more than five or six grades in terms of reading achievement.

The second obstacle that I think needs to be addressed is the lack of minority role models that exist for students. It is estimated that, in the next five to six years, there is going to be a 50 percent turnover in teachers in this country. What is being addressed to make sure that we identify the key role models that support the high expectations for the urban minority student?

Another obstacle that I think needs to be addressed is the fact that instructional materials, rather than being focused on higher level skills which allow the high expectations to emerge, are focused on lower order skills. We ask students to regurgitate information and recall factual information. We do not ask them to comprehend, to analyze, and to evaluate.

I dare say that the burger is king in this country. For the most part, the biggest employer of our students who graduate from school is Burger King and MacDonald's. What they ask our graduates to do in those operations, in my opinion, is untenable.

Another obstacle is the fact that teachers often spend less than one percent of instructional time on higher order thinking skills at either the elementary or the secondary level. I dare say that when teachers spend less than one percent of instructional time on maintaining the high expectations that we should have, that all students can learn how to comprehend and think, we are missing the boat in terms of the focus that we have for instruction.

Another obstacle that I feel needs to be addressed that goes beyond the technology issues that are being addressed by both of the illustrious presenters who preceded me are poorly developed textbooks and basals that are used to support the education of urban students. I might add that in the area of hardware, we might be making some general gains in terms of what is being developed, but in the area of software, we continue to stub our toes regarding what we proceed to do.

I am frightened that what we will have with the use of computers is just retreaded computer software that replicates all the problems that textbooks have in them today.

Another obstacle that I feel needs to be addressed is teachers who lack the exposure to strategies which prepare students for lessons. I think it is critically important that we help the students bridge the gap between what they know and what they do not know, that we do not primarily focus our attention on teaching students specific areas or literacy skills such as that advocated in Cultural Literacy, E. D. Hersch, but that we think about the processes of education, how students are able to bridge that gap between what they know and what they do not know and how students can begin to identify what they know and what they do not know.

I also feel that a critical area that needs to be addressed is a lack of partnerships that exist in schooling among the home, the school, and the community. For example, some of the research that has been emerging out of Bloom and the University of Chicago suggests that the simple grading of homework is key for providing the link between the home and the school so that parent partnerships in schooling begin to emerge. When that is done, student achievement is improved.

Another obstacle that I feel needs to be addressed is the fact that students spend less than five minutes per day outside of school on reading, and in school, they spend only seven to eight minutes per day. Out of school, they spend approximately 130 minutes per day watching television.

Maybe it is going to be an improvement in terms of what Dr. Mann is talking about in terms of how that technology is used, and I believe it is. The critical issue here is you do not teach students how to read without giving them the opportunity to read. They need to be able to pick up textbooks and readers and use them and process that and interact with that material as they attempt to understand and comprehend the language of the text.

You do not do that with technology. You do not do that with television. You do it through the use of printed material.

That printed material can be computer based. It can be through the use of technology, but in my opinion, I am more concerned about what students do when they pick up a book or when they do not pick up a book.

Another concern of mine specifically that I have not heard addressed here is that principals and administrators often place their best teachers at the secondary level. They handle the so-called behavior problems that secondary students exhibit. It is important that we begin to address the concerns of students at an earlier grade so that the best teachers are not only at the high school level but also exist at the lower elementary level where those problems can be nipped in the bud before they begin to fester.

Recommendations regarding specifics in terms of what I believe research is indicated and that we need to consider are alluded to by me in my written testimony. I will not take the time of the committee at this point to express them.

I do have specific questions and concerns regarding the center that has been proposed here. I believe that much more discussion and planning needs to occur with the right people. I feel that some of those people are sitting in this room. I feel that Chuck Moody and others represent those kind of people.

When I look at $1.6 million that is considered as an expenditure for a center, I smile and laugh, primarily because how much money is really needed to begin to address the considerations that I believe we are beginning to just touch the base on. I think a lot more consideration needs to be given.

I would rather see a proactive effort rather than a reactive effort in terms of particular needs. I would rather see existing support being used as you have indicated, sir, in your testimony regarding the centers that already exist, and I would rather see those centers, in line with other potential centers, beginning to address the isolation of the education of disadvantaged students for our students whom we try to address in the urban centers.

I believe it is critically important for us to begin to identify the minorities who are conducting the appropriate research in these areas, and I believe that we need to begin to build a communication network that brings these people together from the East Coast to the West Coast.

I believe we need to begin to address what I believe is most important in education, and that is higher expectations for all students in the appropriate mediated experimental phases that might exist, in particular, research based activities that are supported by universities, centers, and other people who are truly concerned about the education of minorities.

Thank you for this opportunity to testify, and I would be pleased to answer any questions that you might have.

[The prepared statement of Eric J. Cooper follows:]

SIMON SCHUSTER

SCHOOL GROUP

Eric J. Cooper
Vice President
In-Service Training & Telecommunications

Congressional Testimony
before the
House Subcommittee on Select Education

THE EDUCATION OF DISADVANTAGED STUDENTS

Submitted by: Eric J. Cooper
September 29, 1988

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Mr. Chairman and Members of the Subcommittee, I thank you for this invitation to testify and appreciate the work you have been doing in support of education.

May I mention, Mr. Chairman, that you have received written testimony which I would like to enter into the record.

My testimony today will be focused on the education of disadvantaged students. The testimony reflects a primary philosophy that all students can learn to learn with the proper educational mediation. How teachers intervene, how parents intervene and how the community intervenes to support improved instruction for these students is of paramount importance. Improving the delivery of instruction for students, who at an earlier age were deprived of the opportunity to experience essential educational activities (e.g., exposure to reading through parents who read to them on a consistent basis; trips to museums, zoos, etc.; and, meaningful, educational, preschool experience), is of critical importance. Research is clear on the issue that, when instruction is appropriately matched to the developmental and academic needs of students, all students will learn.

Over the past and present decade, we have been more concrete about the improvement of instruction since we have continued to gain knowledge about the processes of learning. This knowledge has emerged primarily out of the line of research identified with cognitive science. It is this research, focused on improving the thinking of students, which has begun to address the transaction by which information is imprinted, communicated or understood -- the "how" of "how we learn." Yet it is also over this period of time that, as Linda Darling-Hammond pointed out to a gathering of educators in Florida dealing with minority issues in education, "between 1972 and 1980, use of teaching methods that might encourage the development of high-order thinking abilities, e.g., project or laboratory work, writing taks, and student-centered

discussions, declined in public schools..." The recent reports on reading and writing produced by the National Assessment of Educational Progress also document the fact that the average performance of students on the important outcomes of education is simply not high enough to meet the needs of the Nation. Clearly, the Nation, as well as students, remains at risk.

The reasons given by many researchers and educators for this decline in the ability of students to perform the more important higher-order thinking skills related to education are based on the observation that many tests, textbooks, curriculums and teacher expectations for students have increasingly focused on minimal skills (e.g., literal comprehension, routine computation, factual recall), rather than the skills which may lead to a higher level of thinking by students (e.g., inferential and critical problem solving, comprehension, representation, elaboration, evaluation and critical analysis). The National Assessment data also suggest "there is more cause for concern about the ability of students to solve problems requiring higher-level skills and understanding of basic principles than their ability to recall discrete facts or to perform routine operations."

This need to focus on improving the thinking skills of students is well documented -- one cannot pick up an educational journal without seeing reference to research emerging out of cognitive science. Yet it is mainly the rhetoric about thinking that has flourished. The application of teaching for thinking to classroom practice still lags far behind. Classroom materials in widespread use still emphasize the acquisition of minimal skills. Teachers and administrators continue to purchase materials which are steeped in teaching students low-level basic skills without regard for what students need to learn to exist as active members of the general society.

When teachers, administrators and parents focus on what should be the end result of instruction (i.e., improved comprehension and thinking), maintain high expectations based on how well students are able to perform higher-order skills, and learn to manage classrooms more appropriately, students will learn to learn. Because of the acute problems related to minority performance, there is a need to objectively analyze what does work.

There are specific organizational and instructional arrangements which have proven successful in educating the disadvantaged. Levine and Eubanks have reported that "....such arrangements emphasize provision of educational assistance to improve reading performance through tutoring before school, during lunch, or after school, utilization of teachers' aides, reductions of non-essential time in art, music, or other subjects, formation of smaller in-class groups for low achievers than for other students..." (Levine & Eubanks, Educating Black Children: America's Challenge, Howard University Press: 1987, p. 22).

Other researchers, such as Benjamin Bloom (University of Chicago), Fritz Ianni (Teachers College, Columbia University) and Barbara Sizemore (University of Pittsburgh), stress the importance of linking the home, school and community in a partnership based on instruction (e.g., the use of graded homework is identified as a factor related to improved student achievement). Other instructional arrangements include the following:

- Enhancing the understanding, of both teachers and students, of the purposes of reading, e.g., how reading is applied to solving problems; and, sharing the need to comprehend, to think, to understand something that is written across subject, grade, age and school.

- Activating relevant background knowledge has been found to be a critical factor related to how well students will be able to comprehend reading material. If the teacher discovers students do not have sufficient background for the reading assignment, he/she needs to prepare students for the material prior to giving it to the students. Activities which build on what students know from their experiences should be captured and used as a bridge between what they know and do not know.
- Teaching students to identify, paraphrase, and summarize key concepts and main ideas in reading assignments, goes beyond the simple teacher-directed statement that the main idea usually occurs in the first and last sentences. Students need to learn that vocabulary is not just a number of isolated words which need to be memorized; they are instead words which represent concepts/thoughts that the author applies to the structure of the passage.
- Cricital evaluation/comprehension should be the primary purpose for reading. Yet researchers have stated that less than one percent of instructional time is spent engaged in the active processing of concepts by students and teachers. Much too much time is spent on lecturing by the teacher; teachers should avoid delegating the passive activities to students, while retaining the active learning responsibilities for themselves, i.e., talking, listening, responding, and analyzing. There are numerous activities which support critical evaluation and comprehension (see Reading, Thinking and Concept Development, College Board, 1985).
- Monitoring or assessing student comprehension is of critical importance, but sadly, very few instruments

in use are up to the task. An exception is the Degrees of Reading Power, New York's and Connecticut's assessment instrument, this instrument is designed explicitly to assess performance on cognitive dimensions associated with reading, rather than one which is designed to develop rote mastery of narrow sub-skills.

- Restructuring/reorganizing a new schooling unit which might be called "The Basic School," to include kindergarten through grade three. Ernest Boyer has stated that in this school, grade levels would be blurred. "It is foolish to fret over whether to fail a student in grades one or two. After all, children develop at different rates and whether a student is in the first grade or second grade is inconsequential" (Educating Black Children: America's Challenge, Howard University, 1987, p. viiii).

The strategies briefly described herein, indicate some of the directions -- some of the cognitive skills and organizational arrangements which we must use as learners and to which we hope students are exposed in the course of the schooling. These are obviously not the only suggestions which may be listed. There are many other strategies for teaching and learning which should be the shared responsibility of schools, teachers, parents, and students.

Research has given us the key to understanding a very complex issue. Obviously, more research needs to be done, but it is applied research which is so critically important. We do not need the line of research described in the Office of Educational Research and Improvement's proposal for the Center on the Study of the Education of Disadvantaged Children. To what end does this lead us, and what can be accomplished with a proposal for 1.6 million dollars? Instead, we need to

reinforce and support the level of applied research already occuring at institutions such as the University of Pittsburgh's Learning and Research Development Center, or at the University of Illinois's Center for the Study of Reading, or at many other outstanding research centers and universities which are already engaged in the application of cognitive science research.

In concluding my remarks, it is my hope that we will begin to remove some of the obstacles which deny all students access to impoved learning. Obstacles such as minimal competency tests and instructional materials stressing lower-order objectives need to be removed. Administors and teachers who do not maintain high expectations for all students need to be retrained or removed. Teachers who are unable to teach their subject areas also need to be retrained or removed. And, transition programs which remove disadvantaged students from the mainstream of regular classrooms need to be eradicated or, at the very least, linked with the regular curriculum in a way which minimizes disruption of academic learning time (research suggests students only spend 15 percent of the school day on academic tasks).

Mr. Chairman, I again thank you for this opportunity to express concerns and suggestions regarding hte education of disadvantaged students. I would be glad to answer any questions that you or your committee might entertain.

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Mr. OWENS. Thank you.
Dr. Harriet Doss Willis, please proceed.

STATEMENT OF HARRIET DOSS WILLIS, DIRECTOR, SOUTHWEST CENTER FOR EDUCATIONAL EQUITY, SOUTHWEST REGIONAL LAB

Ms. WILLIS. Good morning. It is an honor to have this opportunity to testify before the committee and you, Chairman Owens.

I also submitted a written document for the record. It is my testimony, and I am not going to read one word of it. I would like to expand on and reemphasize some of the points that I made in that testimony.

I come at this from the perspective of an urban inner city educator. For more than 30 years, I have been in the field of education. The first 15 of those years, I taught elementary school in St. Louis, and I have never had the opportunity to teach other than black disadvantaged students.

I started that experience with a class of 47 first graders, and I think when I left 15 years later, the smallest number of students I ever taught was 37. I temper that statement by saying that I was very fortunate to have had the experience of teaching black youngsters in the inner city of St. Louis to read, compute, to write, and to feel real good about themselves for that length of time.

Since that time, I have worked in three different regional educational laboratories and in one department of education. All of the work that I have done thus far has been directed toward urban minority disadvantaged education. So, that is the context in which I am going to make my comments.

I thought the conditions for children in the 1950's and 1960's were really bad. I describe the kind of classroom I had, the number of students I had, and in my current work, I am finding that those conditions are considerably worse.

There is no unitary definition, I don't believe, of what is disadvantaged. I think there are significant regional differences.

In cities like New York, places like New Jersey, Baltimore, Maryland, and parts of the South, in spite of the 1954 Brown Decision, there are still lots of classrooms that have all black students in them. In those classrooms, there is the racism of low expectations, and I call it racism because many of those individuals simply believe by virtue of the fact that those are black students that they are not going to do very well, and they proceed to interact with them in that manner, and that is very destructive.

In the cities of the Southwest and the West—I have adopted California as my home currently—while the schools are more ethnically integrated, typical classrooms have large numbers of poor children. Some of those classrooms have as many as six different language groups. There are a number of poor black children and a number of poor white children.

I feel that the public doesn't really know that. They don't know to what extent we have primarily poor children in our inner city schools.

It is my view that anyone who can pay their bills and have a few cents left over puts their child in a parochial or private school, and

that even includes many of our teachers who teach in our public schools. They don't have their children there.

I appreciated Chuck Moody's comments about Ron Edmonds' statement that the schools teach the children of the families they must, and since those families don't have much of a voice in the way schools are run and what benefits their children, those children are not taught as well.

Mr. OWENS. Excuse me, Dr. Willis. I certainly don't want to cut off any of your testimony. If you will please wait for about 10 minutes, I have to go down for an important vote, and I hope all the panelists will also wait for the questioning period. I appreciate your indulgence.

[Recess taken.]

Mr. OWENS. Dr. Willis, you were on a roll and accelerating. I hope the break doesn't lessen your intensity.

Ms. Willis. No, it hasn't. I feel a sense of urgency about this whole situation. So, no, it won't break my momentum at all. I will just pick up where I left off.

I would like to make a correction, though. I made the statement that only poor children are in America's public schools, and when parents have any option at all, they send them to parochial and private schools. I think I said public schools.

Let me continue. There is a condition having to do with the schools themselves, and that is some of our most competent and well trained teachers are like me. They are aging, and they are retiring. Many of the novice teachers are not prepared to meet the challenges of working in urban areas, especially the kind of circumstances I just described where you have six language groups and limited English proficient black students and limited English proficient white students.

I am not sure I would do very well with that set of circumstances. Furthermore, you have 30 of them in a classroom.

I would like to speak to the committee's report and its proposal for a national center and what some of the specific characteristics might be. I commend that approach except that I don't think it will take one. I think because if the regional differences, it is more likely to need four and that there are enough alternatives that one might consider that those four should be encouraged to address alternative models of serving urban disadvantaged students.

One of the things that when one looks at effective schools one sees is that while the characteristics may be present, the approaches to doing the job and getting success are often very different. So, I think that we need to consider alternative approaches.

It is clear to me that long-term concentrated research and development that involves professionals who are willing to work at school sites is really important and that these individuals must have experience conducting their work in these settings. $1 or $2 million is ludicrous to address this problem. We probably need between $35 and $50 million.

As a country, we tend to put our money where our priorities, and it is obvious that our priorities are not in seeing to it that disadvantaged children become more successful.

I would like to talk a little bit about what I believe can be done. There is certainly more evidence of what works for disadvantaged

students than is being implemented in any schools I know about. So, first, I think the range of solutions that have been tested and have produced results need to be communicated in a manner that school leaders can use it.

The way to higher promotions and excellence in universities is not to disseminate their findings to schools. That is not how you get promoted. That is not what your tenure committee considers. As long as that is the condition, it is really difficult to get some of those best studies to school people without a middleperson intervention.

There are studies of school content, a lot of them. There are studies of sensible middle and junior high school organization and instruction. Recently, there are a number of studies of alternative approaches to traditional high school organization and instruction.

So, I think there is a lot that is known, and I spend most of my time in schools. As I mention some of the solutions that might be tried, many of those school people don't know what I am talking about.

To my knowledge, there is no concerted effort to assist an urban school district with implementing the best knowledge from kindergarten through grade 12. Certainly, someone may install a middle school experimental program or come along and install a secondary drop-out prevention program. But there is very little assistance to a school district to look at the entire program from kindergarten through grade 12 in urban school districts.

I believe it will take organizing, synthesizing, and reporting the evidence about what we know already. In order to do that, of course, it would require, as you mentioned in your report, some collaboration between researchers, developers, and disseminators. The mechanism for such collaboration has not existed, nor have the fiscal and human resources been available to any significant extent directed toward collaboration.

Collaboration is usually mentioned in grant requests or proposals. After everything else has been mentioned, there is a line, typically, about collaboration, and it is an effort that is expected to occur on top of the primary work that the researchers, the developers, and the disseminators conduct. This approach doesn't produce much collaboration, because there isn't much in the way of emphasis on that being a major outcome.

A second thing that needs to happen once we use the knowledge that we have and get it into the schools for demonstration models of improvement is that we need to work with the urban educators to identify where the gaps are and with them in the existing knowledge base for the purposes of launching additional R&D efforts. I think we do know a lot, but I think there are some things we probably don't know, especially as we look at a State whose public school student population is now 50 percent. The terms "minority" and "majority" are taking on new meaning in the southwest part of the United States, and it is increasing in other places in the country.

I think that it would be fine if it could all be driven by technological advancement, but I think you need human beings, teams of technical assistance with experience working in urban districts to help plan, implement, and evaluate programmatic efforts based on

research and development knowledge. As you wrote in your report, Mr. Chairman, direct technical assistance to districts and schools similar to the agricultural county agents is needed.

Districts and schools serving the most needy students seldom have the time or the staff to conduct a comprehensive review of all of the available evidence about what may work for particular situations and students. It is not that those people aren't busy working. They are dealing with such an array of problems that our society has placed upon them. They feed the children. They are attempting to do drug abuse education. They are attempting to do AIDS education. They are attempting to serve the youngsters who have handicapping conditions, and they are attempting, also, to do what American schools were created for in the first place.

So, it is not that they don't work hard, but it is simply that the problems are so overwhelming for most urban educators and there is a such a wide array of problems that they can't stop and reflect. Technical assistance in the schools working with a small committee of those people can help them do that.

I have an anecdote that stresses this very much. I was recently asked to go to a high school district of four high schools that eight different districts' elementary schools feed into. Those four high schools have a 40 percent minority population pretty much described as I indicated earlier.

We visited the schools, interviewed the professionals, interviewed teachers, and what was probably most significant, we interviewed students. When we asked the district to give us students to interview, we got the members of the student council. So, we had to hang out on the school yard so we would get some real students that we thought might be more needy than the students on the council.

Few of the professionals in those four schools knew much about the increase in the minority population. They had not had as extensive a minority population. We just asked around, and they said, oh, I think it has increased by about 10 percent. They had no idea that almost half of their student population was minority population.

They were not aware that their tough policies regarding attendance, homework, and class participation were not even understood by many of the students. Fortunately, I had a Spanish speaking professional with me who was able to converse with those students in their language, and they said, sometimes we break rules and we didn't know it was a rule we should not break.

And these tough policies are just simply not working. My analogy is that I tried golf lessons once and was such a dismal failure that I dropped out of that. That is exactly what was happening for many of those students. Human beings cannot experience failure but so long.

In this particular district, they were tracking, expelling, and suspending students as a response to this new student population. My colleagues and I were able to make recommendations based on R&D outcomes and knowledge of effective practices occurring in other high schools in the nation to the superintendents and the principals. Further, we are also available to provide assistance with implementing the recommendations.

Now, we try to take individuals to the trough to drink, and sometimes that is very difficult. But if we can get them to sip a little bit, we can move on to providing them with some real assistance, because there are some solutions to almost everything we identified as a problem in that school district.

That kind of on-site and follow-up assistance is simply not available that often. That doesn't mean that we don't need significant basic research continuing to occur, but we do need a systemic approach that we get that research, we get it translated so schools can use it, and we take it to them, and we can't do that only with technology.

The research and development and technical assistance has to take place in the schools on a long-term basis. It can't wait for two more Sessions of Congress to get started, because we have already lost a generation of black students. I know that for sure. They are doing what the newspaper calls "drive-by shooting" in the streets of Los Angeles right now. Some of those were children who were in our public schools in Los Angeles.

There are concerns about working with families. I heard some of those concerns expressed here, and I applaud the efforts that are doing that successfully, but schools have a rare opportunity to work with young people six hours a day, five days a week, 180 days a year. For many youngsters, that is far more time than they have to interact with overburdened or disturbed parents or other caretakers.

The focus also has to be on academic learning as well. Many of the concerns about self-image, responsibility, and behavior would diminish if children felt worthy because they felt competent. I know I watched a lot of surly, unhappy, and misbehaving black children become contributors when they began to do well in school.

And I still believe that we need good instruction, changed policies—policies that say to a youngster you are going to lose 20 percent of your grade when you are out of this school 5 times. Well, the natural consequence of being out of school is that you have to catch up, and we ought to make that natural consequence available to our high school students to at least try. An automatic decline in a percentage of the grade—and this is not an atypical policy in this nation—is very detrimental to getting those youngsters to feel that they have some responsibility for catching up.

That is just one of the policies. I think any national center that addresses these issues needs to look at State and local policy about what happens to these youngsters, tracking policy, courses like .5 algebra. I don't understand what .5 algebra is. You either take algebra or you don't, and I firmly believe for many of these youngsters, algebra in the ninth grade is the gate that keeps them from going anyplace after that.

So, even if it takes two years for some of these youngsters to get the concepts of algebra, I would be willing to keep them in high school longer with significant work and an opportunity for some of the vocational education activities as well so that they will stay there.

My final comment is about technology. It is just simply because I had terrible experiences this last year. I went to a school that was

well equipped. It had four 30-station computer centers, and there were opportunities for interactive technology going on there.

However, there was a policy in that school. If the low performing students were not doing well, they didn't get to use either the science equipment in the science program or to use the computers. So, we need to look carefully as we are promoting technology that the services of those opportunities get to the youngsters who need them most.

Thank you for this opportunity.

[The prepared statement of Harriet Doss Willis follows:]

IT'S TIME WE DEALT SERIOUSLY WITH DISADVANTAGED CHILDREN

Testimony Presented by

Harriet Doss Willis
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Los Alamitos, California

Before

The Select Education Subcommittee
U.S. House Education and Labor Committee
Major R. Owens, chairman

September 29, 1988

It's Time We Dealt Seriously
With Disadvantaged Children

I consider it an honor to be asked to appear before the Select Education Subcommittee and its chairman, Major R. Owens. The subcommittee's recent preliminary staff report, the chairman's personal comments, and today's hearing convince me that the plight of the Disadvantaged Child remains a national concern.

This morning I intend to limit my testimony to three issues. First, I want to talk a little about the plight of the disadvantaged student. The subcommittee is no stranger to the statistics; however, I don't believe we can restate them enough if shock is what it takes to focus attention on this national tragedy.

Second, I want to say something about the public apathy that limits our collective efforts to deal with the challenge posed by our nation's poor and underserved children. The American people are not heartless. They certainly are not inclined to work against their own best interests. So why is it nearly 30 percent of our children are allowed to receive a substandard education that cripples their opportunities for future happiness and in the process threatens the vitality of the entire nation?

Third, I intend to discuss the notion of a National Laboratory for the Improvement of Education for the Disadvantaged. The subcommittee's recent report proposes such an institution and I believe the notion has merit.

The Disadvantaged Student Problem

Henry M. Levin of Stanford University, no stranger to this committee, has long been interested in the issue of disadvantaged or "at-risk" students. In a recent paper (1) he introduced us to a key definition and some graphic statistics.

First, he tied a definition to the label "at-risk" that I take to mean "disadvantaged." "At-risk students," writes Levin, "are those who lack the home and community resources to benefit from conventional schooling practices." That's probably a bigger number than those counted for Chapter I purposes. Either way, it's a lot of children.

Such individuals tend to be poor students. They are frequently drop-outs. And they're concentrated among minority groups, immigrants, non-English-speaking families, families headed by single mothers, and the poor.

Levin points out what those of us who work with this population have long known: at-risk students begin school behind their classmates. And stay there. "By sixth grade," says Levin, "the at-risk student is two years behind grade level; by the twelfth grade they are four years behind."

This group of students is increasing. Levin reminds us that not all minorities are disadvantaged and many who are don't come from ethnic or racial minority groups. Nevertheless, the minority population is often used as a proxy for assessing the growth of the disadvantaged. Using that barometer, by the year 2020 minority children will represent almost half of all children 17 and under (2). I should point out that in my adopted state of California, we've already reached that milestone.

Not only are the numbers of at-risk students increasing, but Levin says their degree of disadvantage is also increasing. He points out that fewer Hispanic high school graduates now go on to post-secondary schools, despite the widespread loosening of admissions standards. "The dramatic change in participation," says Levin, "may have been occasioned by poorer academic preparation and thus lower eligibility for

postsecondary education or less adequate financial resources, both factors associated with increasing disadvantaged."

The disadvantaged are not a hidden minority. And as their ranks swell, they're going to become even more evident to the rest of society. Levin worries that we'll see the emergence of a dual society with a large and poorly educated underclass. I already see it in many of the communities where I work. These are the individuals who now experience or will soon face high unemployment rates, low earnings, and menial occupations.

Levin goes on to make a point that shouldn't be lost on this subcommittee: poor, uneducated, and unhappy as they may be, this underclass population still has a vote. Why would any of us think they'll be content to maintain a system that keeps them at the bottom? Society needs to heed Levin's warning that "economic and educational inequality, in conjunction with equal political rights, suggests future polarization and intense conflict."

Why Don't We Do Something?

If things are as bad as Levin and others suggest, why isn't something being done about the problem?

One answer, of course, is that the public thinks things are getting better even as they deteriorate. The much ballyhooed reform movement has captured the public's attention. And in so doing, the movement has shifted the attention away from the disadvantaged children.

David Clark of the University of Virginia, in a recent paper (3), says "The public believes that education is in a period of reform, that those reforms were initiated during the Reagan administration, and that they are working."

I am not here today to discuss the so-called educational reform movement. Suffice it to say that it hasn't done much for disadvantaged children.

Clark says the Reagan administration ". . . has altered the priority placed on equity and redirected the concern of the public and policymakers to excellence, standards of performance, and individual competition."

Professor Clark concludes his paper by saying the Reagan administration has changed education policy over the past eight years. Foremost among these changes is ". . . inattention to equity concerns across the board, the poor, minorities, women, and handicapped."

The Reagan administration, he says, has convinced the public that raising standards and expectations will benefit all segments of the population, including the disadvantaged. And if not, it's probably because they didn't try hard enough.

Besides, argue those who think we're already doing enough for these students, isn't Chapter I for at-risk children?

Yes, of course. But it's an insufficient response. Levin says we require a "four-fold expansion" of Chapter I. Levin, an economist who knows how to do a budget analysis, says the country needs to find $18 billion beyond the present allocations for at-risk students. That's a lot of money.

Mr. Chairman, I believe that if it were in your power to provide these dollars you would do so. I believe that Congressman Hawkins, our long-time champion of the disadvantaged, would do the same. But I am not so naive as to believe we could expect many of your colleagues to go along.

And that brings me to my third point.

Show Them We Can Make a Difference

I applaud Chairman Owens for calling this oversight hearing. We need more of them. We need to capture the public's attention. We need to build the argument

that we have a problem in this country and it's one that needs to be addressed, now, at all costs.

Concurrently, we need to build the case that we are capable of doing something about the problem once we get the public to focus on it. Once we have their attention, we need to be able to prove that additional federal resources can make a difference.

That's why I am so supportive of your call for a National Laboratory for the Improvement of Education for the Disadvantaged.

Frankly, I don't believe that even an awareness and appreciation of the problem will produce an outpouring of funds unless we can demonstrate that we have some solutions ready at hand.

Professor Levin says we need a four-score increase in Chapter I funds. By implication he's saying Chapter I is effective with the children we're concerned about. I'm not so sure.

Robert E. Slavin of Johns Hopkins University wrote in a recent paper (4) what I've found in my own work with schools . . . "Achievement effects of participation in Chapter I programs tend to be small, and to be limited to the early grades and to the students who are least behind."

Slavin and his colleagues at Johns Hopkins' Center for Elementary and Middle Schools say we need to do a lot more thinking about Chapter I before we dump huge amounts of new dollars into the program.

And the things he says we need to do are exactly what this subcommittee proposes for a National Laboratory.

That is, Slavin says we need to develop comprehensive, well-structured approaches that includes excellent training procedures, teacher's manuals that work, and

curriculum materials that make a difference. And we need to do this in conjunction with those urban and rural schools that enroll significant numbers of disadvantaged students.

Time isn't on our side. The class of at-risk students is growing fast. But we know a lot about the problem. We know a lot about what it takes to develop the model programs needed to address these students' particular learning needs. What's missing are institutions --national laboratories-- that have sufficient resources, a critical mass of talent, and a congressional mandate to make a difference with disadvantaged students and the schools that enroll them.

I'd suggest the Congress create four of these institutions; they should be given a similar charge, but encouraged to develop competing models or approaches. Give them ample resources --$35-$50 million each for five years-- to accomplish their task. And link them up with existing regional laboratories to ensure that the results get transmitted quickly throughout the nation.

We're talking about a lot of money -- more than the current educational research budget of OERI. But we're also talking about spending a penny of the Chapter I dollar to ensure that the remaining 99 cents makes a significant difference in the lives of those children most in need.

Mr. Chairman, I applaud you and your subcommittee for staging this hearing. It's time we begin to deal seriously with disadvantaged students.

Notes

1. Levin, Henry M. (1988) "Financing the Education of At-Risk Students." Paper prepared for a special issue of Educational Evaluation and Policy Analysis, edited by James W. Guthrie.

2. Pallas, Aaron M., Gary Natriello, and Edward L. McDill. (1988) "Who Falls Behind: Defining the 'At-Risk' Population." Paper presented at the annual meeting of AERA, New Orleans, La.

3. Clark, David L., and Terry A. Astuto (1988) "Education Policy After Reagan - What Next?" A publication of the Policy Studies Center of the University Council for Educational Administration, University of Virginia.

4. Slavin, Robert E. (1988) "Chapter I - Focus on Programs, Not Politics." *R&D Preview* (in press), a publication of the Council for Educational Development and Research, Washington, D.C.

Mr. OWENS. Thank you.

It is hard to know where to begin, but why don't we begin with technology. You made the statement that technological innovations are most important for "at risk" students. Can you elaborate on that, Dr. Roberts?

Ms. ROBERTS. I think we have heard very eloquently described some of the most fundamental issues that have to be addressed in education for these youngsters: providing them with environments that support learning wherever that learning takes place; giving them an opportunity to excel wherever their strengths lie; in the beginning, providing them with neutral, non-judgmental teaching and opportunities to learn; connecting those youngsters to the mainstream in whatever way is possible.

Our evidence is that there is an awful lot that technology can provide as resources to make these kinds of efforts happen. I would like to give you an example of what is happening in your own State, Mr. Chairman.

The New York State Teacher Resource Centers, now some 90 of them across the State, have two principal areas of concern in supporting teachers. One is the broader use of technology in all subject. Secondly and much more importantly, I believe, is beginning to address in a very practical, hands-on way the needs of at risk youngsters.

One of the things that has happened because these centers are connected to each other through an electronic network system that is easy to use and easy to operate is, first of all, teachers are supporting each other in the kinds of learning that, for example, Dr. Willis is talking about. They are exchanging information about effective ways of working with these students, and we know there are some very effective methods and approaches that can be used.

However, I think equally interesting is the fact that the network has now become available, is being made available to students in the classroom so that each week, these youngsters have an opportunity to communicate with youngsters all across the State, to build an exchange of information, to learn about what is happening in other schools in other areas, and to literally be connected to worlds that they were not connected to before.

Now, that is one set of examples.

Mr. OWENS. Let me expand on that and ask the other panelists to also comment. There are some junior high schools in New York City whose books are so old that most of the newly emerging—they are not so new—independent countries of Africa are not in those geography books because the books are so old. And they are spending very little money to replace them. A recent grant to help upgrade the libraries provides very little money.

Should we have investments in new technology before we have adequate basic things like good libraries and good books? That is not a trick question; it is a profound question, because many cities built airports before they had adequate roads. As a result, the cities progressed, because the airports were really more in tune with what was needed.

So, it may be that the new technology is more important. If you have limited resources, you start to back away from looking at new technology.

Involved in that, of course, is the fact that I have visited a lot of schools which have computers. Money was made available several years ago for computers, and somebody had the contract and sold them very well to the principals and teachers. A couple years later, the computers were in the closets and locked up somewhere for safe keeping, because the few people who knew how to operate them were not there any more or they had slightly broken down and there was no technician available.

So, all this hardware requires some new ways of looking at things. They didn't invest in the technicians. The system that made the hardware available and the person who actually got the contract wasn't required to also provide ongoing technicians to keep it working.

Let me ask that as a broad question to all of you. How do we deal with that, and is there a case to be made for pushing on and saying that technological innovations may do what the old systems have not done? We say we are only able to reach 20 percent of the youngsters in the public school system anyhow. Traditionally, the best we have been able to do is reach 20 percent and do a good job with them. Technology may be a key to reaching some of that other 80 percent.

So, even if you don't have good textbooks and libraries, it may not be a bad idea to invest in technology. Let me throw that out to you.

Ms. WILLIS. I would like to respond to that. I think that we have to be careful that we do significant things with the technology. I have visited a lot of Chapter 1 classes where the youngsters are doing more slowly what I could have done with them in 20 minutes, kind of drill and practice activities. Not all the software that is available, but there is some good software that is available that doesn't get to those youngsters.

I think technology does some things well, but I think that human beings well are required to do some things, too. If I had history textbooks or geography textbooks that didn't deal with new independent African nations, you could use the newspaper. You could use popular magazines.

I have some conflict about updating all the texts, because you can never keep them updated as the world changes, especially in that area. But I think teachers should have some responsibility to keep the knowledge updated, and that is an area where they could use some assistance in terms of staff training. They may not have even thought about it.

You are fortunate if you saw any geography being taught at all.

Ms. ROBERTS. I would agree absolutely. It is critical when one thinks about serving the needs of youngsters that that is where you start. Whatever the resources are, that is what should be employed.

I can't tell you how much we emphasize in our report that technology never replaces teachers. Teachers are absolutely essential to effective use of any teaching resource in the classroom.

It may be that some of our instructional materials, the most effective instructional materials, are going to come to us in increasingly different forms. Let me give you an example of the encyclopedia. It is extraordinarily expensive to replace encyclopedias in

schools. Yet, I think most schools continually update those materials when they can.

It may be far cheaper and far more efficient to keep those encyclopedias on disk, and then the upgrade becomes far less expensive in the future. That is just one example.

The key is what the learning need is. What are the learning needs of these youngsters? What multiple array of resources ought to be applied to those needs?

In some districts and in some States, those resources are not easily acquired because of the regulations that surround the purchase of instructional materials. That is another whole issue, but it seems to me it is a very critical issue when one thinks about how materials are increasingly going to be made available to us in a multitude of forms—texts, film, interactive video, just a whole array of materials.

Mr. OWENS. Dr. Mann, you said that one of the reasons the disenchantment with the inner city schools is setting in is because it costs more to educate those youngsters. It may cost more, but I don't think we are spending more at this point. Could you elaborate on that a bit?

On the issue of technology, for instance, you find the schools in the suburbs have a far greater array consistently from classroom to classroom and school to school of the new technology being used. The libraries are like dream libraries compared to the holes that you find in the inner city that they call libraries. They have media centers out in the suburbs.

The total overall expenditure per pupil is also higher. Did you say it is costing more or it would cost more if they were to provide an adequate education?

Mr. MANN. It is the public's perception that it costs more and they are getting less. I would argue, obviously, that it is costly the society a great deal not to have effectively educated all of its children.

With respect to technology, there is some data which indicates that 97 percent of all the elementary schools in the United States are already using microcomputers for instruction. However, if you take a look at the use of those microcomputers, 60 percent of those being used are for kids who are gifted and talented. That has a lot to do with who gets access to this new technology, and the gifted and talented population, technically, is not supposed to exceed perhaps 10 percent of the population. Yet, they get 60 percent of the access.

There are here what are called distributional consequences. For example, half of the homes in this country within two years will have personal computers. As somebody who cares about education, I think that is a terrific resource. That is a wonderful base on which to build the work of the public school. Half the homes of America are going to have personal computers by 1990. Which half?

It is the kids who most need it who are least likely to get it unless there is some sort of very thoughtful and comprehensive attention to these issues from the Federal Government.

Mr. OWENS. I suppose there is a role for the Federal Government in trying to help set some standards and some guidelines and deal

with this issue of cost-benefit ratios. I scanned your study, but I haven't read it. Does it address that awesome problem of cost-benefit ratios and how public school systems should deal with it?

Ms. ROBERTS. We don't provide any recommendations. What we tried to understand was what we understood about cost effectiveness of educational technology. I have to tell you that it is no surprise that the information is very spotty and not very well documented.

We have much better information about the cost effectiveness of educational technology in situations that involve training or education in the military. There the data is absolutely compelling.

We have some studies that are beginning—Dr. Becker's study at the Center for—I can't think of the center's name, but it is the Johns Hopkins University center. His research right now is, I think, the most promising research in really giving us a sense of what the cost effectiveness differences might be with youngsters, for example, who are receiving instruction with computer resources and those who are not.

In our report, we basically come down and argue that the technology is effective. Whether or not it is cost effective will depend on the way in which resources get allocated. We found it was extraordinarily difficult to get that data, particularly in school districts which don't have the resources even to track that data. So, it is a very complex question.

Mr. OWENS. We might submit a few more written questions to you. For instance, we funded a center for technology, I think, at Harvard, and we would be interested in knowing what your study found with respect to that.

Ms. ROBERTS. Let me just make clear that we did not evaluate anybody's center, but we learned a great deal from that center. One of the things that I think ought to be credited to that center is the effort they took to work from the very beginning with classroom teachers, to ask the question, what are the targets of difficulty that technology ought to begin to address that we haven't been able to successfully address in traditional ways?

I think that some of their work there, particularly in mathematics and science, is very important and will make contributions over a very long period of time.

Mr. OWENS. Thank you.

Dr. Mayberry, our analogy and parallel with the agricultural extension and outreach effort is a little different. It doesn't go quite as far as the Tuskegee model went, and you were actually using it to teach students, adults and students. We want to aim ours at decision makers, at the boards of education, the parents, the teachers, the principals, the administrators, and not actually get into the business of teaching students but, instead, provide a resource to those people who are decision makers and who are the doers in the teaching process.

However, there are enough parallels for me to ask this question, that is, in terms of 1988 and the atmosphere of Tuskegee as a land grant and, to some degree, a learning grant institution, what kind of results do your local high schools yield in terms of drop-outs and in terms of students who go on to college? What are the reading scores? What is the educational environment like as a result of

your presence there and the kind of work that Tuskegee has pioneered?

Mr. MAYBERRY. Frankly, I cannot say it is different because of the concept of extension education as I have discussed it, because, to my knowledge, this really hasn't become involved in the public school system such as I am proposing or envisioning that might happen in the case of your center. In other words, it has not been envisioned. The extension approach has not been envisioned in the public school system, to my knowledge, as the way to go in technology transfer.

Mr. OWENS. Yours has been limited to adults? You have actually taught adult students how to read?

Mr. MAYBERRY. No, it is not limited to adults, but it is limited to extension clientele which include the only non-adults which are those in the 4-H programs. The 4-H programs are still concentrated in the agricultural and homemaking enterprises, not in general education.

Mr. OWENS. So, it has not been expanded and nobody has caught the fire of outreach and what outreach can do in other areas?

Mr. MAYBERRY. No, and as I see it, this is a concept which really needs to be explored and used on at least an experimental and demonstration level, using the agent. I mentioned the indigenous leaders. No one, to my knowledge, in the areas where the disadvantaged are concentrated has thought of using a teacher from that particular area or from that clientele, somebody who can be listened to.

I was interested in this because I thought it was an experimental approach that should be explored. We haven't done it up until now.

Mr. OWENS. Dr. Willis, you also pointed out that dissemination has no support, no sponsors. Do you have any suggestions on what role the Federal Government might play in correcting that?

Ms. WILLIS. I was referring to collaboration across those people who do basic research, the people who do development efforts which have not been supported much in the last 8 or 10 years anyway, but they were supported early in the regional laboratories' history, and the people who support school planning, implementation, and evaluation called technical assistors. There is no automatic or organized coordination across those three entities.

Those of us who do technical assistance mind the knowledge base so that we give sound advice, but collaboration doesn't automatically exist between those three functions in the system.

And no one group of organizations does all three. The closest to providing the translation and delivering the services came from the regional educational laboratories except at the current time, they don't work directly with schools and school districts. They are supposed to work with and through other educational agencies.

So, there just isn't a systematic approach to generating the knowledge, developing that knowledge so it is usable, and then disseminating that knowledge directly to schools.

Mr. OWENS. Thank you.

Dr. Cooper, we got a written statement from Dr. Marjorie Hoover of San Francisco State who, like you, implied that as we move forward and have these discussions on what research and development can contribute, there are assumptions being made that we

don't have to discuss reading programs anymore. I appreciated your comments. You talked about the basic problem. We still may have poorly developed textbooks and good hardware but poor software, et cetera.

How can we help? How can the Federal Government get involved? Again, should we try to develop standards for judging or standards for guiding some of this software development, standards for guiding priorities and emphasis? How can we make sure that something as basic as reading doesn't get lost; that as they pursue efforts to improve reading, they are cognizant of technology and software research and work them into the program?

Mr. COOPER. I think that is a good question. I think one of the pitfalls that faces all of us is the fact that we sit here and advocate for a particular position, and that position might be myopic when one looks at the overall problem that we are all faced with in terms of trying to address it.

I, for one, believe that technology, as has been indicated, is only a tool. When all is said and done, it is what occurs in the classroom, and it is the multi-institutional responsibilities for effective schooling that need to exist which I think are of paramount importance in my eyes.

I think that when we think about change, when we think about reading, when we think about technology, we have to think about all the problems that face us so that we can begin to address those more coherently and cohesively. I think that some of my own research that I have been involved in when I was at the College Board and with others in New York State indicated that we have a very large problem. Most of my work has been with urban school systems.

Fifty percent of those students are dropping out. Of that fifty percent that are retained, less than half of them are capable of reading Dave Anderson with any level of comprehension. Many of them are unable and have not been given exposure to the kind of reading experiences that are really focused on what should be the end result of all instruction, and that is improved thinking and comprehension by students, not improved regurgitation of information, not improved factual recall.

I think that when we begin to address these issues, we need to look at the multi-institutional responsibilities. We need to look at how we seek out parents to involve them in the school and not expect them, through a letter, to involve themselves in the school.

If I may use an anecdote, the best success I have ever had in terms of working with students was when I as a teacher dealing with students who had been labeled emotionally disturbed from Harlem—I had my greatest success when I as a teacher went into the homes after school, not worrying about punching the clock—Dr. Green is trying to get rid of that policy in New York City—but actually went into the homes and began to work with the parents and the students there so that that gap that existed was bridged.

I say that only because I think it is how people process information that is a lot more important than how people deal with specific content or a particular thrust, whether it is technology, whether it is improved textbooks, whether it is trade books or whatever. When all is said and done in the area of reading, students are

going to learn how to read when you give them an opportunity to read.

It is simple. The idea is not mine. It has been stated way before this swinging pendulum which has existed which has moved us toward the area of focusing on improved thinking for students in the area of reading. I think that is what is critically facing us all here. I think we need to give more clear review of the kinds of collaborations that might occur in a school that might really begin to bring the powers that be to fact this very difficult problem.

Federal dollars need to be put toward those kinds of collaborations. You need to begin to think about how business can be involved with schooling, how parents need to be involved with schooling, how universities and centers need to be involved, and how they can talk among each other as we attempt to deal with this problem.

Otherwise, what we do is scramble around for Federal dollars without an understanding of the overall problem, and that is how students, teachers, parents, communities, and businesses begin to talk to each other in addressing the problem that is focused on the needs of the student and, especially, the needs of that school-dependent child.

I care about all kids, but I am more concerned about the child who depends on schooling for learning. We need to focus in on those children. The way that we focus in on them is by looking at the overall problem and not little particular areas that one might begin to spend time on. I am not saying each individual area is not important. I just think there is a larger problem that we have not begun to address yet.

Mr. OWENS. Thank you all very much.

I won't have time to listen to the answers to my final question, but I will leave it with you. Why has academia been so silent in the face of this mounting crisis? Over the last eight years, we have spent less and less on research and development for schools. The Federal Government's role has been diminished. In areas where we have spent money, it has not been to address the major problem, the problems of inner city youth.

In academia, there is no indication of any loud outcry in terms of this just being basically an unprincipled approach. It is a political problem. I submit to you that everything related to education is always going to be political. Education is too important not to be political.

Our hope is that we can make education less partisan. We understand that must be worked through the political mechanisms, but hope that all parties and all persons will at least come to some basic agreement that we want to educate all of America's children; that it is in the best interests of the country. Even if the Judeo-Christian tradition won't guide us in that, let's allow our national interests guide us to that conclusion.

Once we reach that conclusion, we must turn it over to the scholars and the researchers—the people who know the business—to really be able to work without the partisan interference which has been the predominant characteristic for the last eight years. Too much partisan interference has lessened the support. On the other

hand, I think that all of us as political decision-makers must play a role in lessening that partisan interference.

Certainly, the academic community should have been more outspoken and somehow rallied to the defense of those helpless children out there for whom, as you have pointed out, the situation gets worse every day. There is no real significant intervention on the horizon at this point.

Thank you very much, and I look forward to working with all of you in the future.

The subcommittee stands adjourned.

[Whereupon, at 12:25 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

91-637 (108)